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THE

BIRDS OF JAMAICA.

THE

BIRDS OF JAMAICA.

BY

PHILIP HENRY GOSSE;

ASSISTED BY RICHARD HILL, ESQ., OF SPANISH-TOWN.

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PREFACE.

WHITE of Selbourne has somewhere expressed the gratification which would be afforded to him by a sight of the *hirundines* of the "hot and distant island" of Jamaica. We know, in fact, exceedingly little of the *biography* of tropical animals—of those details of their habits, which are to be known only by a close and continued observation of them in their woodland homes. The present volume may perhaps contribute an acceptable item to the amount of information, derived, as it is, entirely from original investigation. Nearly two hundred species of birds are thus ascertained to belong to the Jamaica Fauna, though of several of these, the author can give only indications more or less precise. He cannot doubt that many species have escaped the researches both of himself and his friends, especially among the migrant visitors. The valuable assistance, however, of a resident Ornithologist, whose notes *pervade* this volume, and to whom he would here express his deep gratitude, have greatly diminished the omissions which must otherwise have been unavoidable.

Perhaps a word of apology may be thought needful for the minuteness with which the author has

sometimes recorded dates, and other apparently trivial circumstances, in his observations. It is because of his conviction, that an observer is hardly competent to determine what circumstance is trivial, and what is important: many a recorded fact in science has lost half its value from the omission of some attendant circumstance, which the observer either did not notice, or thought irrelevant. It is better to err on the side of minuteness than of vagueness.

The author takes this opportunity of proffering his cordial thanks to those friends in Jamaica who kindly assisted his investigations; and particularly to Andrew G. Johnston, Esq., of Portland, and George Wilkie, Esq., of Spanish-town.

LONDON, March, 1847.

SYNOPSIS

OF THE

BIRDS OF JAMAICA.

ORDER.—ACCIPITRES.

FAM.—VULTURIDÆ.
Cathartes aura.

FAM.—FALCONIDÆ.
Buteo borealis.
Falco anatum.
columbarius.
[Morphnus urubitinga.
[Pandion Carolinensis.
[Nauclerus furcatus.

FAM.—STRIGIDÆ.
Ephialtes grammicus.
Strix pratincola.

ORDER.—PASSERES.

FAM.—CAPRIMULGIDÆ.
Chordeiles Virginianus.
Nyctibius Jamaicensis.
pallidus.

FAM.—HIRUNDINIDÆ.
Acanthylis collaris ?
Tachornis phœnicobia.
Cypselus niger.
Hirundo pœciloma.
euchrysea.
Progne Dominicensis.

FAM.—TODIDÆ.
Todus viridis.

FAM.—ALCEDINIDÆ.
Ceryle alcyon.

FAM.—NECTARINIADÆ.
Certhiola flaveola.
maritima.

FAM.—TROCHILIDÆ.
Lampornis mango.
Trochilus polytmus.
Mellisuga humilis.

FAM.—CERTHIADÆ.
Mniotilta varia

FAM.—TURDIDÆ.
Merula leucogenys.
Jamaicensis.
[Turdus mustelinus.
Mimus polyglottus.
Trichas Marylandica.
Vermivora Pennsylvanica.
Seiurus Noveboracensis.
aurocapillus.
Parula Americana.
Sylvicola coronata.
pensilis.
æstiva.
eoa.
discolor.
Canadensis.
pannosa.
pharetra.

FAM.—MUSCICAPADÆ.
Setophaga ruticilla.
Myiobius pallidus.
tristis.
stolidus.
Tyrannus Dominicensis.
caudifasciatus.
crinitus.
Tityra leuconotus.
Vireo Noveboracensis.
Vireosylva olivacea.

FAM.—AMPELIDÆ.
[Ampelis Carolinensis.
Ptilogonys armillatus.

FAM.—CORVIDÆ.
Cyanocorax pileatus.
Corvus Jamaicensis.

FAM.—STURNIDÆ.
Quiscalus crassirostris.
Icterus leucopteryx.
[—— ?
[—— ?
Dolichonyx oryzivorus.

FAM.—FRINGILLADÆ.
Tanagra Zena.
Pyranga rubra.
Tanagrella ruficollis.
Euphonia Jamaica.
Coturniculus tixicrus.
Crithagra Brasiliensis.
Spermophila anoxantha.
olivacea.
bicolor.
adoxa.
Pyrrhula violacea.
[Robinsonii ?
[Guiraca Ludoviciana.

ORDER.—SCANSORES.

FAM.—PSITTACIDÆ.
Ara tricolor ?
[aracanga.
[arauna.
[militaris.
Conurus flaviventer.
Psittacus agilis.
leucocephalus.

FAM.—PICIDÆ.
Picus varius.
Centurus radiolatus.

FAM.—CUCULIDÆ.
Saurothera vetula.
Piaya pluvialis.
Coccyzus Americanus.
seniculus.
Crotophaga ani.

ORDER.—GYRANTES.

FAM.—COLUMBADÆ.
Columba Caribbea.
rufina.
eucocephala.
Turtur leucopterus.
Zenaida amabilis.
Chamæpelia passerina.
Peristera Jamaicensis.
Geotrygon sylvatica.
montana.
Starnænas cyanocephala ?

ORDER.—GALLINÆ.

FAM.—PHASIANIDÆ.
Numida meleagris.

FAM.—TETRAONIDÆ.
Ortyx Virginiana.

ORDER.—GRALLÆ.

FAM.—CHARADRIADÆ.
Ægialites melodus.
vociferus.
[semipalmatus.
[Charadrius Virginiacus.
[Squatarola Helvetica.
[Strepsilas interpres.

FAM.—ARDEADÆ.
Egretta nivea.
candidissima.
cœrulea.
ruficollis.
Herodias virescens.
Ardeola exilis.
Nycticorax Americanus.
[Ardea Herodias.
[Egretta leuce ?
[Botaurus minor.
[Platalea ajaja.
[Ibis rubra.
[Numenius longirostris.
[Hudsonicus ?

FAM.—SCOLOPACIDÆ.
Pelidna pusilla.
Actitis macularius.
Totanus chloropygius.
flavipes.
melanoleucus ?
Gallinago Wilsoni.
[Tringa canutus.
[Calidris arenaria.
[Catoptrophorus semipalmatus.
[Rusticola minor.

FAM.—RALLIDÆ.
Aramus scolopaceus.

Rallus longirostris.
concolor.
Ortygometra Carolina.
minuta.
Jamaicensis.
Porphyrio Martinica.
Gallinula galeata.
Fulica Americana.

FAM.—RECURVIROSTRADÆ.
Himantopus nigricollis.
[Recurvirostra Americana.

ORDER.—ANSERES.

FAM.—ANATIDÆ.
Phœnicopterus ruber.
Dendrocygna arborea.
[autumnalis.
Anas maxima.
Cyanopterus discors.
inornatus.
Erismatura spinosa.
[ortygoides.
[Chen hyperboreus.
[Anser Canadensis.
[Dafila acuta.
[Pœcilonetta Bahamensis.
[Mareca Americana.
[Aix sponsa.
[Querquedula Carolinensis.
[Rhynchaspis clypeata.
[Chaulelasmus streperus.
[Anas obscura.
[boschas.
[Cairina moschata.
[Oidemia perspicillata.
[Fuligula Americana.
[affinis.
[rufitorques.
[Nyroca leucophthalma.

FAM.—PELECANIDÆ.
Pelecanus fuscus.
Sula fusca.
[fiber.
[piscator.
[parva.
Fregata aquilus.
Phaeton æthereus.

FAM.—LARIDÆ.
Thalasseus Cayanus.
Hydrochelidon fuliginosa.
[Megalopterus stolidus.
[Thalasseus Cantiacus.
[Sterna argentea.
[Hydrochelidon nigra.
[Xema atricilla.

FAM.—PROCELLARIADÆ.
[Thalassidroma —— ?

FAM.—ALCADÆ.
[Alca —— ?

FAM.—COLYMBIDÆ.
Podilymbus Carolinensis?
Podiceps Dominicus.

THE BIRDS OF JAMAICA.

ORDER.—ACCIPITRES. (*Birds of prey.*)

FAM.—VULTURIDÆ. (*The Vultures.*)

JOHN-CROW VULTURE.*

(*Turkey-buzzard.*—WILSON.)

Cathartes aura.

Vultur aura,	LINN.
Cathartes aura,	ILLIGER.—Aud. pl. 151.

THE history of this species has been so ably written by Wilson and Audubon, that I shall do little more than touch on one or two disputed points in its economy. An excellent memoir of this Vulture, communicated to me by my valued friend Richard Hill, Esq., of Spanish-town, affords some interesting particulars:—

"Notwithstanding it forms so common a feature in our landscapes, being seen every day and every where, on the mountain as well as in the plain, in the city as well as in the country, the Aura is not common to the West Indies. It exists in Cuba and

* Length 25½ inches, expanse 66, tail 9½, wing from flexure 20¼, rictus 2$\frac{8}{10}$, tarsus 3, middle toe 2$\frac{1}{10}$, claw $\frac{8}{10}$.

Trinidad, but is unknown in Hayti, and in all the intermediate islands of the Caribbean chain. We are no doubt indebted for it to an accidental colony blown over to us from Cuba, and Cuba herself owes it to some stray visitants from the neighbouring continent of Florida. Some similar fortuity imparted to us in common with Cuba, from America, its naturalized hive-bee, which is said to have been, at comparatively a late period, an introduction into St. Domingo.

"Those who ascribe the power which the Vulture possesses of discerning from a distance its carrion food, to the sense of seeing or to the sense of smelling, *exclusively*, appear to me to be both in error. It is the two senses, exerted sometimes singly, but generally unitedly, which give the facility which it possesses of tracing its appropriate food from far distances. * * * * I shall relate one or two occurrences, which seem to me to be instances in which the sense of seeing and the sense of smelling were sometimes separately and sometimes unitedly exerted by the Vulture in its quest for food.

"A poor German immigrant who lived alone in a detached cottage in this town, rose from his bed after a two days' confinement by fever, to purchase in the market some fresh meat for a little soup. Before he could do more than prepare the several ingredients of herbs and roots, and put his meat in water for the preparation of his pottage, the paroxysm of fever had returned, and he laid himself on his bed exhausted. Two days elapsed in

this state of helplessness and inanition; by which time the mass of meat and pot-herbs had putrefied. The stench becoming very perceptible in the neighbourhood, Vulture after Vulture as they sailed past were observed always to descend to the cottage of the German, and to sweep round, as if they had tracked some putrid carcase, but failed to find exactly where it was. This led the neighbours to apprehend that the poor man lay dead in his cottage, as no one had seen him for the two days last past. His door was broken open; he was found in a state of helpless feebleness, but the room was most insufferably offensive from something putrefying, which could not immediately be found, for the fever having deprived the German of his wits, he had no recollection of his uncooked mess of meat and herbs. No one imagining that the kitchen pot could contain anything offensive, search was made everywhere but in the right place: at last the pot-lid was lifted, and the cause of the insupportable stench discovered in the corrupted soup-meat.

"Here we have the sense of smelling directing the Vultures, without any assistance from the sense of sight, and discovering unerringly the locality of the putrid animal matter, when even the neighbours were at fault in their patient search.

"Some few days succeeding this occurrence, after a night and morning of heavy rain, in which our streets had been inundated to the depth of a foot, and flood after flood had been sweeping to the river the drainage of the whole town,—a piece of recent offal had been brought down from some of the yards

where an animal had been slaughtered, and lodged in the street. A Vulture beating about in search of food, dashed in a slanting direction from a considerable height, and just resting, without closing his wings, snatched up the fresh piece of flesh, and carried it off.

"Here was the sense of sight unassisted by that of smelling, for the meat was too recent to communicate any taint to the morning air, and the Vulture stooped to it from a very far distance.

"On another occasion very near to the time when these facts attracted my notice, a dead rat had been thrown out, early in the morning, into the street, having been caught in the previous night. Two Vultures sailing over head in quest of a morning meal, descended at the same time, stooping to the dead rat, the one from the south, the other from the north, and both seized the object of attraction at the same moment.

"Here again was the vision, unaided by the sensitiveness of the nostrils, directing *two* birds with the same appetite, at the same moment, to the same object.

"For the next example, I am indebted to the records of a Police Court. A clerk in the engineer department at Up-park Camp, brought before the magistrates of St. Andrew's, on the 20th of January, 1840, a man who had been beset in the night by the dogs of the barracks. The poultry-yard had been repeatedly robbed; and this person was supposed to have been prowling after the roost-fowls, at the time the dogs rose upon

him." This case had been heard, and the man committed to the House of Correction, when a complaint was presented against another man whom Major G., also of the camp, had detected under similar circumstances, and lodged in the guard-house. Two days after his detection, "the Major observed some Carrion-Vultures, hovering about a spot in the fields, and on sending to see what was the matter, a Kilmarnock cap containing a dead fowl, and some eggs, tied up in a pair of old trousers, was found very near to the spot, where the prisoner was caught. This discovery by the aid of the Vultures confirming the suspicion against the prisoner, he was condemned.

"The last instance that I shall relate is one in which the senses of hearing, seeing, and smelling were all exercised; but not under the influence of the usual appetite for carrion food, but where the object was a living, though wounded animal.

"A person in the neighbourhood of the town, having his pastures much trespassed on by vagrant hogs, resorted to his gun to rid himself of the annoyance. A pig which had been mortally wounded, and had run squealing and trailing his blood through the grass, had not gone far before it fell in the agonies of death. At the moment the animal was perceived to be unable to rise, three Vultures at the same instant descended upon it, attracted no doubt by the cries of the dying pig, and by the scent of its reeking blood; and while it was yet struggling for life, began to tear open its wounds and devour it.

"These several instances, I think, abundantly shew that all the senses are put in requisition by the John-crow Vulture in its quest for food."

From the facts thus presented by Mr. Hill we gather also, that the common opinion is erroneous, which attributes to the Vulture a confinement of appetite to flesh in a state of decomposition. Flesh is his food; and that he does not pounce upon living prey like the falcons, is because his structure is not adapted for predatory warfare, and not because he refuses recent, and even living flesh, when in his power. If the John-crow Vulture discovers a weakling new-born pig apart from the rest, he will descend, and seizing it with his beak, will endeavour to drag it away; its cries of course bring the mother, but before she can come, the Vulture gives it a severe nip across the back, which soon ensures the pig for his own maw. If a large hog be lying in a sick condition beneath a tree, the Vulture will not hesitate to pick out its eyes, having first muted upon the body, that it may discover whether the animal be able to rise; the contact of the hot fæces arousing the hog if he be not too far gone. Cattle also he will attack under similar circumstances. One of my servants once saw a living dog partly devoured by one. The dogs of the negroes, half-starved at home, "bony, and gaunt, and grim," if they discover carrion, will gorge themselves until they can hardly stir, when they lie down and sleep with death-like intensity. A large dog thus gorged, was sleeping under a tree, when a John-crow descended upon

him, perhaps attracted by the smell of the carrion which the dog had been devouring, and began tearing the muscles of the thigh: it actually laid open a considerable space, before the poor animal was aroused by the pain and started up with a howl of agony. The wound was dressed, but the dog soon died.

A notion is very prevalent, that the Vulture refuses the flesh of its own kind; or that if there ever be an exception, it is only when the stomach of the dead bird is filled with carrion. This I have proved to be unfounded. I shot one in August, the body of which I threw out; in a very few minutes it was surrounded by others, and the bones picked clean, though the stomach was nearly empty, and the body had no odour of carrion.

"The Aura Vultures," says Mr. Hill, are often to be observed soaring in companies, particularly previous to a thunder-storm. This occurrence is commonly remarked, because at almost all other times this species is seen solitary, or, at most, scouring the country in pairs. They appear to delight in the hurly-burly of transient squalls, gathering together, and sweeping round in oblique circles, as the fitful gust favours them with an opportunity of rising through the blast, or winging onwards through the misty darkness of the storm. The effect which this imparts to a tropical landscape at a time when thick clouds are upon the mountains, and all vegetation is bending beneath the sudden rush of the tempest, as gust gathers louder and louder, is particularly wild and exciting. Ordi-

narily, however, in the evening, when the sea-breeze is lulling, and the fading day-beam is changing like the hues of the dying dolphin, they delight to congregate, and career at an immense height. At this time they soar so loftily, that they are scarcely discernible as they change their position in wheeling from shade into light, and from light into shade. They seem as if they rose upward to follow the fading day-light, and to revel in the departing sunbeams, as, one after the other, the varying hues are withdrawn, or irradiate only the upper heavens.

"There is a salacious predilection of the Aura Vulture for the black hen of the poultry-yard, and the black turkey, supported by so many well-authenticated instances, that I cannot doubt the fact. It is said that the Vulture on these occasions makes its amorous attack with an eagerness assuming the character of ungovernable fury. Fear overcomes the hen, and the sudden assault terminates in an embrace, from which she escapes only to linger and die in a very short time. A sort of *carcinoma uteri* is the consequence. * * *

"This is altogether a curious and very unaccountable fact. Those who know how difficult it is to bend instinctive nature, and induce the union of animals different and yet similar, will perceive the perplexity in which this occurrence is involved. The only link of relationship in these events, is the very distant similitude of colour; for the unnatural predilection is restricted to fowls of black plumage."

I may add that on my reading the above notes

of my friend, I mentioned this statement to my negro servants, both of whom assured me that the fact was indubitable, and well known; and each of them averred that he had witnessed its occurrence.

The dimensions in the note, p. 1, were those of the largest of two adult males of the ordinary size, which, however, is considerably less than that of continental specimens. The tongue is singularly formed, and may be termed spoon-shaped; or rather it is a half-tube, curved in its length, having its edges, which are bony, cut into minute and beautifully regular teeth, pointing backwards. The skin of the head is naked, except some small scattered hairs, and falls on the occiput into ten or twelve transverse wrinkles; its colour varies in the same individual, being sometimes purple, then in a few minutes bright red; when dead, it is a dull lake-pink. The feet are scaly, white; or rather dull reddish, covered more or less with a white scurf; the red hue is most apparent at the upper part of the tarsus; the claws are horny black. Immediately in front of the eye is a series of irregular tuberculous excrescences of a dull white, varying in extent.

Like many black birds this Vulture is subject to albinism. There was a pied one, which for a long time had been occasionally seen in company with others over Bluefields and the vicinity. I at length invited him with some flesh, and lying in wait, shot him. The white feathers were promiscuously interspersed, chiefly on the shoulders, breast, upper and under tail-coverts, and wing-quills; some of

the longest primaries were wholly, others partially, white; but the wings were not uniform in the distribution of the colours. This individual was recognisable almost as far as visible; for the white was very pure. Some, however, are found much more completely white than this; my negro lad, Sam, had seen one which had the wings wholly white except some of the least coverts; and the breast also white.

The situations usually selected in Jamaica by this Vulture for the laying and hatching of its eggs, are hollows and ledges of rocks in secluded places, or inaccessible crags and cliffs. A little dry trash or decaying leaves, are all the apology for a nest. A young one taken in such a situation, and brought to me in May, was nearly full-fledged, but bore little resemblance to the adult. The whole body, with the exception of the winglet, the wing quills, and the tail, was clothed with down of the purest white, while the naked head with the beak was black. The eyes, as usual in young birds, were blue-grey. It smelled strongly, unbearably, of musk; was very fierce, tilting at every thing, striking with the wings, and leaping forward to bite. It kept up a continued harsh hissing. The nest contained two young, but they had begun to wander, though as yet unable to fly.

FAM.—FALCONIDÆ. (*The Falcons.*)

RED-TAILED BUZZARD.*

Chicken Hawk.

Buteo borealis.

Falco borealis,	LINN.—Aud. pl. 51.
Falco Jamaicensis,	GMEL.
Buteo borealis,	BECHST.

This Buzzard, which we learn from Wilson is spread over the United States, is the most common raptorial bird in Jamaica. Permanent, not migratory, we see it all the year round, sailing deliberately in wide circles over the pastures and ruinates, now near the ground, but presently soaring into the upper air, each circle higher and higher till the bird is lost in the glare of a tropical sky. It is common to see two individuals of this species in company, sailing each in its own circle, but intersecting the other; and as they thus fly, they utter from time to time a sudden energetic cry, "*pinyee.*"

The frequency of this bird's depredations on the poultry of the homestead, has given it a provincial appellation. In the stomach of one, examined by Wilson, he found, however, the remains of frogs and lizards. Its courage is not proportioned to its size or arms. Not long ago, near Bluefields, two

* Length 20 inches, expanse 44½, tail 7½, flexure 13½, rictus 1$\frac{9}{10}$, tarsus 3¾, middle toe 1½, claw 1.

of these Hawks swooped together upon a white barn-door cock, who defended himself so vigorously and so successfully as to keep them both at bay for some time, until, help coming, both the marauders were shot.

Some observations of Mr. Hill's, on the flight of the birds of prey, elicited by a few remarks in a letter from a friend, appeared to me so interesting, that he kindly placed both in my hands, for the advantage of the present work; and I here present them to my readers.

Samuel R. Ricketts, Esq., to Richard Hill, Esq.

"With regard to Hawks, I have had many opportunities of observing their habits here, as I have a large common, and a flock of turkeys. They perform successive circular movements in the air, and their pounce is done by closing the wings upwards. They appear to be falling, when doing so. A chicken was taken here some days ago from the roof of the house, having fallen from the talons of a Hawk I was in pursuit of. The South American Hawks fly higher, and in larger circles, than those of Europe:—why, I cannot tell, but such is the fact. I speak from personal observation. Our Hawk has a peculiar note in very dry weather, and is then said by the negroes to be "calling the rain."

Richard Hill, Esq., in Reply.

"Your observation about the widened circuit which the Hawks of this country, and those of

South America generally, take when surveying their prey, has led me to trouble you with the following remarks on the flight of raptorial birds.

"Raptorial birds that take their quarry on the ground, as we very well know, before they seize their prey, attentively survey it; keeping it in view by sailing round and round it. In these circumgyratory evolutions they leisurely gaze down on their intended victim, and then descend circle by circle, to pounce on it with a swoop.

"The attention of birds in ordinary or direct flight is immediately fixed on the objects before them. The swiftness with which they shoot through the air makes every visual impression indistinct and evanescent on either side of them. If they take wing for a distance, they rise at once high, that they may command a view of the place which they intend to visit; and if they proceed to an object that is near, they elevate themselves to such a height only as is necessary to give them a clear and direct course to where they are speeding. The circular flight of raptorial birds, is therefore the result of their directing their vision to the centre of the gyrations they describe in examining their prey, or descending upon their victims.

"The eye of all birds is large and prominent. The prominence widens the field of vision. The width of the circle which the several kinds of raptorial birds variously describe, I think, as a rule, will be found to be determined by the size of the head and position of the eyes, or increased with the rotundity of the head of the bird. The

direct vision being altered with the increase of space between the eyes, Hawks of the Buzzard kind, which have large and round heads, may be expected to wheel in wide circles; the expanded space being required, that they may keep the vision of their wide-apart eyes direct upon the objects beneath them.

"Owls fly differently. They search for their prey, as if they were pursuing it with the vigilance of the hound. They skim along the surface of the earth, glide among trees, explore avenues, sweep round, rise and fall, wheel short, and dart down, but never sail in circles. Their wide staring eyes are placed in what may be called their face, being right forward in front, and have scarcely any field of vision laterally. They therefore hunt with a forward and downward gaze, like dogs over a field. The globe of the eye of these nocturnal *raptores*, being immoveably fixed in the socket by a strong elastic cartilaginous case, in the form of a truncated cone, they have to turn their heads to view objects out of the path of flight, and their neck is so adapted for this exertion, that they can with ease turn round the head in almost a complete circle, without moving the body."

I have never met with the nest of this Hawk; nor has Wilson given us any information concerning it; but a young friend, very conversant with out-of-door natural history, informs me that he lately knew of one, a large mass near the top of an immense cotton-tree into which he observed the old birds frequently go. It was at Content, in the pa-

rish of St. Elizabeth. The gigantic dimensions assumed by the *Ceiba*, which strike a stranger with astonishment, combined with the smoothness of the trunk, rendered its summit perfectly inaccessible, and prevented particular examination. At length he witnessed the emergence of two young ones, and their first essay at flight. He assures me that he distinctly saw the parent bird, after the first young one had flown a little way, and was beginning to flutter downward,—he saw the mother, for the mother surely it was,—fly beneath it, and present her back and wings for its support. He cannot say that the young actually rested on, or even touched the parent;—perhaps its confidence returned on seeing support so near, so that it managed to reach a dry tree; when the other little one, invited by the parent, tried its infant wings in like manner. This touching manifestation of parental solicitude is used by the Holy Spirit in the Song of Moses, to illustrate the tenderness of love with which Jehovah led his people Israel about, and cared for them in the wilderness. "As an eagle stirreth up her nest, fluttereth over her young, spreadeth abroad her wings, taketh them, beareth them on her wings; so the Lord alone did lead him, and there was no strange God with him."—(Deut. xxxii. 12.—See also Exod. xix. 4.)

GREAT-FOOTED HAWK.*

Duck-Hawk.

Falco anatum.

Falco Peregrinus, WILSON.—Aud. pl. 16.
Falco anatum, BONAP.

The only individual of this species that has fallen under my notice is a preserved specimen, now before me, which was obtained and prepared at the Pedro Kays, about the end of March, 1846. The rocks so named, of which I may have an opportunity of speaking more at large, are situated about sixty miles to the south of the western end of Jamaica, forming the prominent points of a large shoal, which is marked on the old Spanish charts as the Vibora bank. The islets or kays are the habitation of immense numbers of sea-fowl, especially Boobies and Terns; and the eggs of the latter form no unimportant article of commerce. Several small vessels are annually sent from Kingston and other ports, in the month of March, which return loaded with eggs: and parties are often made by sporting gentlemen, to enjoy the pleasure of shooting on these desert rocks.

It is to the politeness of George Wilkie, Esq., who visited the Kays in the past Spring, that I am indebted for the present specimen, shot by him.

* Length 20 inches, expanse — ? tail 7, flexure 14$\frac{1}{8}$, rictus 1 $\frac{1}{2}$, tarsus 2$\frac{2}{10}$, middle toe 1$\frac{2}{10}$, claw $\frac{9}{10}$.

In the United States this bird is found to prey principally upon ducks, which it appears to strike with its feet, but allows to drop to the ground before it secures them. If, as is probable, its predilection extends to other aquatic birds, its presence at the Pedro Kays, where such prey abounds, on which it may riot undisturbed, is not surprising. But, as the period of its occurrence is that of the migration of many species of ducks from the Spanish main to the United States, our bird may have been a follower, with predatory intent, of some of the many bands of migrant ducks which were passing the rocks about that time.

The Prince of Canino has separated this species from the Peregrine Falcon of Europe, with which it was supposed to be identical. The European bird, which was renowned as the Tiercel and the Faucon of falconry, is inferior in its dimensions to our species.

PIGEON-HAWK.*

Falco columbarius.

Falco columbarius,	LINN.—WILS.
Falco temerarius,	AUD. pl. 75.

Though of small size, this bird is not lacking in spirit and courage, often striking at prey nearly as

* Length 12 inches, expanse 25, tail $4\frac{4}{10}$, flexure $7\frac{4}{10}$, rictus $\frac{8}{10}$, tarsus $1\frac{6}{10}$, middle toe 1, claw $\frac{1}{2}$, closed wings $1\frac{1}{2}$ inch short of the tip of the tail.

large as itself. It hovers about the savannas, frequently flying very near the grass or bushes, but it seems to have favourite resorts. In the guinea-grass piece of Mount Edgecumbe, which stretches along the sea-shore from Belmont to Crab-pond, there are several hoary cotton-trees, (*Ceiba eriodendron*) of giant size, around which I have rarely failed to see more than one of these little Hawks. From one to another of these they sail on graceful wing, usually alighting on a prominent branch, near the summit. One which I shot from such a station, manifested no alarm at being aimed at, but peeped down as if its curiosity were excited. The smaller pigeons form the principal prey of this species; but sometimes it appears to be unequal to the conquest of its quarry. My lad observed a Hawk, one day, chasing a Pea-dove, which at length took refuge in a low bush, but was followed by the Hawk; the shaking of the bush showed that a struggle was going on, which seems to have terminated in favour of the gentle Dove, for presently both emerged, the Dove flew off, and the Hawk alighted on a tree close by; this same individual, being shot and wounded, fought bravely with both beak and feet, drawing blood from the hands of its slayer.

The Anis are acquainted with his prowess, and indicate their fear by loud cries of warning to their fellows, huddling away to the nearest bush. The Petchary and Loggerhead Tyrants are often pursued by him, but often escape; for it is remarkable, that if his swoop is ineffectual, he does not repeat

it, but flies off. I have seen one descend upon a flock of Tinkling Grakles, causing the whole body to curve downward in their flight, and alight on a neighbouring tree. But it is said to feed, in lack of better prey, upon beetles and dragon-flies.

This species, which is a summer visitant of the United States, is a permanent resident in Jamaica; but I know nothing of its nest.

In addition to the Falconidæ already mentioned, the following species have occurred in Jamaica to the observation of Mr. Hill:—

The Eagle-hawk (*Morphnus urubitinga.*—Cuv.)
The Fish Hawk (*Pandion Carolinensis.*—Bon.)
The Fork-tailed Kite (*Nauclerus furcatus.*—Vig.)

Fam.—STRIGIDÆ. (*The Owls.*)

DUSKY EARED-OWL.*

Ephialtes grammicus.—MIHI.

I have not been able to find any published description of this well-marked Owl. In the MSS. of

* Length 14 inches, expanse 31, tail $4\frac{6}{10}$, flexure $9\frac{1}{4}$, rictus $1\frac{4}{10}$, tarsus 2, middle toe $1\frac{1}{10}$, claw $\frac{7}{10}$.

Irides hazel; pupils very large, blue; beak pale blue-grey; feet dull lead colour; claws horny grey; cere blackish-grey. General plumage above dusky brown, becoming on the head and under parts, umber: each feather marked with a medial band of blackish hue, and several undulated transverse bars of the same. Egrets of about ten feathers, form-

Dr. Robinson,* however, there is a very elaborate description of the species, drawn up from an adult male, but agreeing with mine, which is from a female; save that he applies the term *cinnamon*, to the parts which I designate as *umber*. Three individuals, all females, have at separate times come into my hands, two of which were immature, as manifested by the downiness of the plumage. One of these was

ing conical *horns* about 1 inch high, giving the countenance a great resemblance to that of a cat. Facial feathers unwebbed, pale umber; those of inner angle of eye, setaceous, black; operculum edged with black; scaly, sub-aural feathers pale fawn-colour, with arrowy centres of black; the outermost rows also mottled with black at the tip; these feathers meet under the chin in a ruff. Feathers of back, rump, tail, scapulars, and wing-coverts, minutely pencilled with blackish; shoulders deepening into almost black; primary greater coverts very dark. Quills and tail pale brown, with broad transverse bars, and minute pencillings of black, confused on the tertials. Wings short, rounded, hollow; third, fourth, fifth, sixth quills subequal. Breast bright umber, with transverse wavy mottlings, and a dash of dark brown down each feather. Belly, thighs, and vent, plain fawn-colour; the feathers downy, filamentous. Under wing-coverts yellowish-brown, a little mottled, the greater broadly tipped with black. Quills beneath, basal half pale-yellowish, apical half nearly as above. Whole tarsus feathered.

Intestinal canal 17 inches long; 2 cœca, distant 2 inches from the cloaca, 2½ inches long, slender at their base, dilating into sacs, thin, and full of dark liquid.

* Dr. Anthony Robinson, a surgeon practising in Jamaica about the middle of the last century, accumulated a very large mass of valuable information on the Zoology and Botany of the island, which is contained in five folio MS. volumes, in the possession of the Jamaica Society at Kingston. The specific descriptions, admeasurements, and details of colouring are executed with an elaborate accuracy worthy of a period of science far advanced of that in which he lived. Accompanying the MSS. are several volumes of carefully executed drawings, mostly coloured. To these volumes I have been indebted, as the reader will find, for many valuable notes, which I thus acknowledge with gratitude.

brought me on the 31st of March by a man who obtained it on Bluefields Mountain. He was engaged in felling a tree, in which the bird was; being disturbed it flew to another at a short distance, when it was struck down with a stick. The time was about noon. The person informed me that he had seen the bird there before, in company with another, which he supposed to be its mate. The stomach of this specimen, a large muscular sac, was filled with an immense quantity of slender bones, which appeared to be those of Anoles, as I discovered by the iguaniform teeth of at least five sets of jaws, of various sizes. They were enveloped in a quantity of fetid, black fluid. There were also the remains of beetles, and of orthopterous insects.

Of another, the adult from which my description was taken, struck down while sitting on a mango tree at Tait-Shafton, on the morning of April 6th,—the stomach was stuffed with the hair and bones of a portion of a rat, and the legs of a large spider; a *Lycosa*, as I believe—certainly a ground spider. Most of the eggs in the ovary were minute, though some were as large as mustard-seed; by which I gathered that the period of incubation was yet distant, though the spring was so far advanced.

The third I had the advantage of seeing alive: one whose downiness indicated youth, was brought me on the 24th of the same month. Its imbecility by day was shewn by the mode of its capture. It was in a small tree on Bluefields Mountain, when a boy, by shaking the tree, caused it to fall to the

ground, where it lay helpless. It was cross all the time I had it, snapping the beak loudly, and striking out as endeavouring to seize the hand; uttering now and then a shrill wail, most plaintive to hear. The globular head, and round full eyes, over which the nictitating membrane was constantly being drawn, gave the living bird an odd appearance. On dissecting it I found in the stomach remains of mice and elytra of small beetles.

From these instances we can pretty well infer the food of the present species to consist largely of shelled insects, as well as lizards and small mammalia. For a while I knew not what to make of a statement of Robinson's, that in his male he found "nothing but some particles of maize;" as also that in another, with "the remains of scarabs," there was "some guinea-corn, and maize." But I am informed that this Owl is known to enter dove-cotes, and devour the young pigeons; the grain, therefore, in these specimens was probably in the stomachs of their prey, and remained in the Owls after the prey had been dissolved, because the stomach of a rapacious bird refuses to digest vegetable food. It would probably have been cast up, if the birds had survived.

I know not whether this is the species that Mr. Hill means when he says, in "Notes of a Year," published in the Companion to the Jamaica Almanack, for 1840,—"After sunset [in evenings in August] the Brown Owl, seated on the dead limb of a tree in some savanna, makes little circuits of about thirty feet diameter, and returns to perch again. I

should judge that it is darting at Coleopterous insects, occasional fire-flies being seen wandering at about ten or a dozen feet above the highest elevation at which the Owls are flying."

The flesh of this species is soft and flabby in texture, and pale in colour.

SCREECH OWL.*

Strix pratincola.

Strix flammea,	WILSON.
Strix pratincola,	BONAP.
Strix Americana,	AUD. pl. 171.

Though Wilson has introduced this bird into his American Ornithology, and described it apparently from native specimens, his very meagre notes of its manners are those of its European representative, the bird being very rare in the United States. In Jamaica it is not at all uncommon, though little seen by day. I have been accustomed to see one nearly every evening, emerge from some lofty woods on a hill just above Bluefields, soon after sunset, and fly heavily over the pasture and house, uttering a querulous cry, *kep, kep, kep,* in a sharp tone, without intermission. Sometimes it was followed by another, and both would betake themselves to a large cotton-tree at the border of the opposite woods, where they

* Length 17 inches, expanse 46, tail $5\frac{3}{4}$, flexure $13\frac{1}{2}$, rictus 2, tarsus $3\frac{1}{4}$, middle toe $1\frac{3}{8}$, claw 1.

would alight on the topmost boughs, and after sitting quiet awhile, resume their flight and their cry together. At other times, one or two are heard, and dimly seen by the light of the moon, slowly flying over the pasture in a large circle. Its motion is noiseless in itself, but almost always accompanied by this monotonous cry; it usually flies high, but remarkably slowly. I had been informed that it sometimes screams shrilly when flying, but this I had not heard, until I had been familiar with the bird in this way, for more than a year. But one night as I lay awake at Content, in St. Elizabeth's, I heard a harsh screech twice repeated, which I at once suspected to be the voice of the White Owl, and presently this was confirmed by the *kep, kep,* of one which was evidently flying round the house, and continued for some time within hearing. And one evening, about three months afterwards, just as the west horizon had faded from its glowing gold to a dull ruddy hue, I heard a Screech Owl flying from the hill as usual over the pasture; when it was overhead, but at a height of perhaps three hundred feet, it suddenly intermitted the *kep, kep,* by a loud scream; then *kep, kep* again, and soon another scream, and by and by another, as it slowly flew along.

This Owl does not seem to affect the deep forests, although it haunts shady places in the vicinity of estates and open grounds, doubtless because in such places its prey abounds. Among these groves it is sometimes seen flitting on soft and silent wing during the day, when it does not usually cry.

About the middle of October, passing through the extensive and beautiful Pen, called Mount Edgecumbe, where the smooth-barked pimento trees grow from the grassy sward, as in a park, my attention was called to a large space walled in, which my negro lad, Sam, told me was a "Spanish hole." Curiosity led me to examine it. On getting over the wall, which was only a fence of dry stones, to protect the cattle from falling in, I found myself in an area of about eighty feet in diameter, in the centre of which yawned a vast pit nearly circular in form, about forty feet wide, and as many in depth. The edge overhung in every part, consisting of sharp limestone rock, so that there seemed at first no means of getting down. Some trees, however, were growing from the bottom, a few being of large size, and all of great height and smoothness, almost wholly of one kind, the bread-nut (*Brosimum alicastrum*). On carefully searching round, we found a slender tree growing so close to the edge as to afford a ready means of sliding down by, but so smooth that Sam was very reluctant to essay it, doubting his power to climb up again. It was with a hope of finding it the resort of owls or bats, that I had determined to examine it, and while we were discussing the possibility of reascending, a large White Owl suddenly flew up, and after flitting round once or twice, sailed away towards the woods. While I was peering into the remote corners, I discerned on a huge flat rock beneath the cavernous sides, what seemed a young bird, snow-white, and of large size, together with several eggs. This made

me more urgent on my lad, and after much persuasion, and the promise to procure ropes, and assistance without delay, in case of need, he at length sprang off, and slid down the tree. By means of a long and tough smilax, which I afterwards used to measure the depth, I passed down to him in succession the gun and the basket; and he proceeded to explore the dungeon. It was evidently formed by nature; for from the overhanging sides depended stalactites of various sizes and forms, in points and festoons, some of the smallest of which he broke off; they were of a rough dead-white surface, but the fracture displayed shining crystals. In one corner were two or three holes of less than a foot in diameter, into one of which he thrust a stick several yards long; it met no bottom, and on being let go, instantly slid out of sight. In another corner lay some immense masses of stone, so large, as to leave a comparatively small space beneath the rocky roof. On one of these lay the object of the enterprise. The lad having clambered up the rocks, was saluted on his approach by a loud hissing from one of the ugliest creatures he had ever beheld; so that he hesitated to touch it. I encouraged him, however; for from the top I could witness all that took place; and he at length opened the basket, and with a stick tumbled the young bird in. Not the least vestige of a nest, nor of any apology for one, was there; but the bird had reposed on a broad mass of half-digested hair, mingled profusely with the bones of rats and birds; half of a rat lay there, freshly killed,

the fore parts being devoured. At a little distance from the bird lay, on the same mass, three eggs, in no wise to be distinguished from those of a hen, in form, size, or colour, save that they were scarcely equal to the *average* size of hen's eggs. I may add that, on emptying them afterwards, I found them to contain only a fluid apparently homogeneous, glairy, but turbid, like very thin paste. They were not collected for sitting, neither being within six inches of another. No sooner had Sam descended, than the old Owl again appeared; but, after flying round the mouth of the pit, and settling for an instant on one of the trees, she flew off again; and though, when we had secured the young and eggs, we waited long in expectation of her return, she came no more while we remained. Having passed up the things by the brier, the lad *shinned* up the tree without much difficulty, and we proceeded home with our young charge. On taking him out, I found him a strange figure indeed: the head long, and sparingly clothed with down; the curved beak, with its flesh-coloured cere; the immense orbits of the eyes marked by a white ring of small down, and the top and back of the head, and all the body besides, thickly clothed with white down of exquisite softness, strongly reminding me of a hair-dresser's powder-puff. The tips of the wings displayed the budding quills, but they bore the singular appearance of flesh-coloured tubes, crowned with a divergent tuft of down. The hinder parts were, as usual in young birds, large and protuberant, and there was not a vestige of a tail as yet. The feet and legs were well developed, and the

bird sometimes stood up on them, but more usually rested on the whole sole, in an upright, but most grotesque attitude. The clothing down was of the purest white, except that in a few parts, as the back of the head and neck, the shoulders, and the elbow of the wing, it was slightly tinged with a delicate buff, hardly discernible. He was a very cross fellow, biting spitefully at everything presented to him, and sometimes at the boards around him, without any provocation; but the beak, though sharp and hooked, was not moved by sufficient muscular power to hurt the hand. He was almost constantly hissing; particularly, but not only, when approached, giving out a sound, that for character, and really almost for volume, may be likened to that produced by the rushing forth of steam from the waste-pipe of an engine. While I was bringing him home, he discharged from the stomach a hard and very dry pellet, an inch in diameter, and about three in length, composed of rats' hair and bones, showing that he was habitually fed with prey as taken, perhaps simply divided, and not with half-digested matter from the stomach of the mother. I found, however, that though it would bite at any object, it had no notion of eating; a bit of flesh seized in the beak being invariably dropped in a second or two. I therefore crammed it, giving it portions of the bodies of small birds and lizards, forcing them into its throat; an operation the less difficult, as the gullet is enormous. The portions remained in the fauces for a few moments, and were then swallowed. When standing up, or sitting, gazing with apparent curiosity at any

person near, it was perpetually swaying deliberately from side to side; sometimes it lost its balance and fell over. The irides were black, but the pupils pale blue. It lay down to sleep, resting the side of its head on the floor.

In the course of a few days it began to seize food when presented to it, which it swallowed eagerly; and I was astonished to see how large morsels it would swallow, such as the undivided body of a large Noctilio, which it could hardly receive into its mouth. The coloured feathers now began to protrude from the lengthening quill-tubes, and I perceived that the tuft of down was slightly attached to the point of the feather, and was deciduous; or rather, that it consisted of very fine and loosely barbed prolongations of the ordinary beards of the vane, very closely resembling in texture the barbs of an ostrich-plume. When it became a little stronger, so that it could support itself a moment on one foot, it began to manifest a singular habit in eating. Almost invariably, henceforth, as soon as it had snatched a piece of flesh, which it did ravenously, it chewed it a moment with the tips of the mandibles; this had the effect of pressing out the morsel on each side so that it protruded. One foot was then brought up under the chin, and thrown forward with a clutching motion, two toes being on each side the beak; this was awkwardly performed, being repeated several times before the morsel was grasped; and the bird often stumbled about on the other foot, or nearly fell over. When the foot had clutched the flesh, it was held in the toes, until the beak could seize it in

a more favourable position for swallowing. Then, by repeated tossings of the head, the morsel was *thrown*, as it were, little by little into the fauces. All the while it was eating, even when the throat seemed quite closed by the descending food, the whistling hiss was maintained with incessant pertinacity. Indeed, this sound, harsh and deafening as it was, scarcely ever ceased, except when the bird was sleeping. It was exceedingly vigilant; the smallest sound, even a light foot-fall, would arouse it, and awaken this most unmusical noise. It was more than usually loud when the bird was hungry, and doubly so at the moment when food was presented to it, as, in its ravenous eagerness to seize, it frequently missed from its hurried motion. Sometimes, when its belly was full, it substituted a quivering whistle, in a very high key, emitted, I believe, through the nostrils. The fæces were very fluid, and resembled a thin solution of lime; they left a chalky deposit, pulverulent: and were not at all fœtid. It seemed to have no desire for drinking. On the 1st of November it died, having been in my care about a fortnight.

Soon after this, my lad Sam being again near the *Spanish-hole*, looked in, and discerned the old Owl sitting on the same spot, and on the 12th, I again visited it. On peeping cautiously over the wall, I discerned her on the rock, and fired; but merely wounding her, she retreated into one of the cavities, so that Sam, on descending, could not find her. There were four eggs, which were placed close together, but in no nest. Another Owl, doubtless the mate,

flew at the report of the gun from somewhere near the margin, opposite to the female's side: but though we made considerable noise in entering the area, and in talking, the boy in descending discovered him perched still near the margin of the cavern. At length, however, he flew off. As the sitting bird had concealed herself, and could not be found, I determined to leave the eggs untouched, presuming she would soon return to them. In the course of half-an-hour I returned, and had the satisfaction of seeing her again on the eggs: I fired, and this time not vainly. In her fall she crushed one of the eggs, which had evidently been in contact with the skin of her abdomen, that part being wholly denuded of feathers. The remaining eggs were advanced towards hatching in *very different degrees*, and one was found on dissection in the oviduct of the bird, completely shelled, and ready for deposition. The yolk of this was small in quantity, and of a pale yellow tint. Other eggs in the ovary were from the size of large shot downward.

About the middle of October, my notice was drawn to some Owls, which were said to make nightly visits to a certain tree in a provision ground at Belmont. I visited the spot the next evening, after sunset; it was a large cotton-tree, with a spur more than usually immense and uncouth. The rounded top of this spur was the scene of the Owls' gambols: as I approached, I heard them uttering the same harsh sound, half hiss, half scream, that had characterized the young one. As it was nearly dark, their white forms were indistinct,

and before I could get within range, they, whose senses were now vigilant and acute, perceived me, and flew to a neighbouring tree, whence they presently removed to a distance. On the following evening I took care to be on the watch soon after sunset: presently I heard the well-known cry *kep, kep;* and the bird, arriving on noiseless wing, took up its station on one of the lofty limbs of the cotton tree. It called in this manner for a minute or two, when the other came flying from another direction, uttering the same sound, and likewise alighted on a limb not far from the former. As it was growing dark, and I was anxious to procure specimens, I fired at one, and brought it down with the wing wounded. It retreated into one of the dark recesses of the spurs, and fought bravely before I could get hold of it, snapping the beak, and trying to bite. When brought to the house, its attitudes and motions were exactly the same as those of the young above described: it would stand for hours on the same spot, gazing intently with its large liquid eyes, at any one before it: swaying slowly from side to side, with the head depressed and protruded, as if to get a better view of the object of its attention. If approached, it opened and snapped the beak; but if pressed, it fell backward on the tail, presenting both feet to clutch: which it did with effect.

Mr. Hill mentions to me a third species of Owl, small in size, and of a brown hue, but I know not any of its generic or specific characters.

ORDER.—PASSERES. *(Perchers.)*

FAM.—CAPRIMULGIDÆ.—(*The Falcons.*)

NIGHT-HAWK.*

(*Piramidig.—Musquito-hawk.*)

Chordeiles Virginianus.

Caprimulgus Americanus,	WILS.—Aud. pl. 147.
Caprimulgus Popetue,	VIEILL.
Chordeiles Virginianus,	BON.

THESE birds are doubtless migratory, for we see nothing of them from September to April. They probably winter with the Grey Petchary and the Red-eyed Vireo, in Central America, as they appear with those species about the beginning of April. We can scarcely fail to recognise the period of their arrival; for their manners and voice are so singular, that they force themselves upon our attention. About an hour before the sun sets, we hear a loud, abrupt, and rapid repetition of four or five syllables in the air above our heads, resembling the sounds, *piramidig*, or *gi' me a bit*, or perhaps still more, *witta-wittawit.* On looking up we see some two or three birds, exceedingly like swallows in figure and flight,

* Length $8\frac{1}{2}$ inches, expanse 20, tail 4, flexure $7\frac{1}{10}$, rictus $\frac{11}{12}$, tarsus $\frac{7}{10}$, middle toe $\frac{7}{10}$.

but considerably larger, with a conspicuous white spot on each wing. They *winnow*, however, rather more than swallows, and more frequently depress one or the other side; and the body and tail behind the wings is rather longer. Their general appearance, their sudden quick doublings, their rushing, careering flight, and their long, narrow, arcuated wings, are so like those of swallows, that after being familiar with them, I have often been unable to determine at the first glance, whether a particular bird were a caprimulgus or a swallow. Like them the Piramidig is pursuing flying insects; and though the prey, from its great height, and probably its minute size, is invisible from the earth, we may very often observe that it is captured, by a sudden arresting of the career, and by the swift zigzag dodgings, or almost stationary flutterings, that ensue. I do not think the prey is ordinarily larger than minute diptera, hymenoptera, and coleoptera; for I have not been able to detect anything flying where these birds were hawking, even when their flight was sufficiently low to allow of insects as large as a bee being distinctly seen. "Mosquito hawk," is one of the appellations familiarly given to the bird, and doubtless not without ground. I am confirmed in this supposition, by the fact that swallows, whose prey is known to be minute, are usually hawking in the same region of the air, and in company with the Piramidigs. By the term "company," however, I must not be understood as implying anything like association, which does not seem to exist even between these birds themselves; they are

usually solitary, except inasmuch as several, hawking over the same circumscribed region, must often come into close proximity; but this seems, in general, neither sought nor avoided; each swoops on its own course, regardless of his momentary neighbour. Yet the tender passion sets aside even the most recluse solitariness in any animal; and to this I attribute it that now and then I have seen one Piramidig following another in close and pertinacious pursuit, ever and anon uttering its singular cry, and evidently desiring to come into contact with, but not to strike or hurt its coy companion. I would not assert from hence that the nuptials of this species are performed upon the wing, because the premises are too slight to decide so important a fact; but it is known that it is so with the European Swift, a bird whose manners greatly resemble those of our Night-hawk.

It is when the afternoon rains of the season have descended plentifully, that these birds are most numerous, and most vociferous; and they continue to fly till the twilight is beginning to fade into darkness. After this, they appear for the most part to retire, and the strange and startling voices, that before were sounding all around and above us, are rarely heard by the most attentive listening. A lad informed me that when out fishing during the night, not far from the shore, the canoe is often surrounded by bats, which make a great noise. But my assistant, Sam, who heard the statement, assured me that these were not bats, but Piramidigs, (with some bats, however, in the company), and that these

birds, when the moon is at or near the full, continue on the wing through the night.* On dark rainy days, such as we get sometimes in May, I have seen and heard two or three abroad even in the middle of the day, careering just as at nightfall.

Early in the morning, before the grey dawn has peeped over the mountain, I have heard over the pastures of Pinnock Shafton, great numbers of these birds evidently flying low, and hawking to and fro. Their cries were uttered in rapid succession, and resounded from all parts of the air, though it was too dark to distinguish even such as were apparently in near proximity. Now and again, the hollow booming sound, like blowing into the bung-hole of a barrel, produced at the moment of perpendicular descent, as described by Wilson, fell on my ear.

The articulations or syllables, if I may so say, which make up the note, are usually four, but some-

* I may be permitted here to record a tribute of affection to this faithful servant, Samuel Campbell, whose name may often appear in this work. A negro lad of about eighteen, with only the rudiments of education, he soon approved himself a most useful assistant by his faithfulness, his tact in learning, and then his skill in practising, the art of preparing natural subjects, his patience in pursuing animals, his powers of observation of facts, and the truthfulness with which he reported them, as well as by the accuracy of his memory with respect to species. Often and often, when a thing has appeared to me new, I have appealed to Sam, who on a moment's examination would reply, "No, we took this in such a place, or on such a day," and I invariably found on my return home that his memory was correct. I never knew him in the slightest degree attempt to embellish a fact, or report more than he had actually seen. He remained with me all the time I was in the island, and was of great service to me. Many of the subjects of this work were obtained by him, when I was not myself with him, and some which I believe to be unique.

times five, or six, uttered as rapidly as they can be pronounced, and all in the same tone. The Chuck-will's-widow and the Whip-poor-will of the northern continent derive these names from a rapid emission of certain sounds not very dissimilar to those of the bird under consideration. The cry is uttered at considerable intervals, but without anything like a regular recurrence or periodicity.

Whither the Piramidig retires after its twilight evolutions are performed, or where it dwells by day, I have little evidence. The first individual that fell into my hands, however, was under the following circumstances. One day in the beginning of September, about noon, being with the lads shooting in Crab-pond morass, Sam called my attention to an object on the horizontal bough of a mangrove-tree, which he could not at all make out. I looked long at it, also, in various aspects, and at length concluded that it was a sluggish reptile. It was lying lengthwise on the limb, close down, the head also being laid close on the branch, the eyes wide open, and thus it remained immovable, though three of us were talking and pointing towards it, and walking to and fro under it, within a few yards. The form, in this singular posture, presented not the least likeness to that of a bird. At length I fired at it, and it fell, a veritable Night-hawk! The reason of its seeking safety by lying close, rather than by flight, was probably the imperfection of its sight in the glare of day, from the enormous size of its pupils: but the artifice showed a considerable degree of cunning.

An intelligent person has stated to me that early in the morning, where a perpendicular face of rock about twenty feet high rises from the hilly pastures of Mount Edgecumbe, he has seen these birds leave what seemed to be nests, built in the manner of some swallows, on the side of the rock, near the top. But I strongly suspect he is mistaken in the identity of the bird. One day, at the end of July, as I and Sam were following Baldpate Pigeons on some very stony pasture at Pinnock Shafton, much shaded with pimento and cedar-trees, we roused a bird of this family, and, I think, of this species, which started from the ground near our feet, and fluttered in an odd manner, inviting our attention. I was aware of her object and began to search carefully among the loose stones for a young bird, or an egg, but could discover neither, though I have no doubt either the one or the other was not far off. I have been told that it habitually chooses for its place of laying, the centre of a spot where a heap has been burned off in clearing new ground; perhaps on account of its dryness.

In some "Notes of a Year," published in the Companion to the Jamaica Almanack, Mr. Hill had used the term, "triangular," in connexion with the flight of this bird. In reply to a question of mine, on the subject, he thus writes: "I send you a diagram of the flittings about of the Goatsucker. It illustrates my allusion to the triangular flight of the bird. This peculiar cutting of triangles struck my attention, when I was watching the morning flight of

some three or four Goatsuckers, just at day-dawn, while I strolled through the pastures of a pen in St. Andrew's, where I was visiting. The morning twilight had spread a clear glassy gloom over the whole cloudless expanse around and above me; and as no direct ray shone on the woods and fields, which lay silent and sombre beneath,—the flitting birds were seen distinctly, like dark moving spots against the grey sky. I was struck with the sudden shifts by triangles which they were seen to make. They never moved very far from one to another direction, but darted backward and forward over a space of some five hundred yards, preserving a pretty constant horizontal traverse, over some trees in a near pasture, whose honeyed fragrance on the morning air told that they were in blossom. Occasionally only, they rose and sank so as suddenly to change their elevation above the clumps of foliage. Yarrell observes that Goatsuckers are remarkable for beating over very circumscribed spaces; but I have not found any one who notices their cutting in and out by triangular shifts. It is not so perceptible in the obscurity of the evening, but in the perspicuousness of day-dawn it is plainly visible; and I made a note of it, and dotted in the angular appearance at the time."

In some parts of Jamaica this bird bears the appellation, most absurdly misapplied, of "Turtle-dove:" it is occasionally shot for the table, being usually fat and plump. It is a very beautiful bird. The stomach, protuberant below the *sternum*, is a large globular sac; the other viscera are small.

Of one which I dissected, shot in its evening career, the stomach was stuffed with an amazing number of insects, almost (if not quite) wholly consisting of small beetles of the genus *Bostrichus*: there were probably not fewer than two hundred of these beetles, all of one species, about a quarter of an inch long.

The primaries, which are long and narrow, have a peculiar downy surface, like the nap of cloth, extending down the inner vanes, and covering the outer two-thirds of their breadth; this is visible only on the upper surface. It does not exist in our Nyctibius.

There is in my possession, presented to me by Mr. Hill with many other interesting objects, an egg of much beauty, which, when brought to him, was reported to be that of a Caprimulgus. It certainly belongs to this family, but not, as I think, to this species, judging from Wilson's description. Its dimensions are $1\frac{2}{10}$ inch, by $\frac{8}{10}$, of a very regular oval, polished, and delicately and minutely marbled with white, pale blue grey, and faint olive.

POTOO.*

Nyctibius Jamaicensis.

Caprimulgus Jamaicensis,	GMEL.
Nyctibius Jamaicensis,	VIEILL.
Nyctibius pectoralis,	GOULD, Ic. Av.

BOTH the Whip-poor-will and the Chuck-will's-widow have been assigned to Jamaica; neither of these vociferous and unmistakable birds, however, have fallen under my observation there. It is not improbable that the present bird has been mistaken

* Length 16 inches, expanse 33½, tail 7¾, flexure 11¼, rictus 2½, breadth of beak at base measured within 2$\frac{2}{10}$, tarsus $\frac{3}{10}$, middle toe 1$\frac{8}{10}$.

Irides hazel, orange-coloured, or brilliant straw-yellow; feet whitish, scurfy; beak black. Interior of mouth violet, passing into flesh-colour. Plumage mottled with black, brown, grey, and white; the white prevailing on the tertiaries, tertiary-coverts, and scapulars, the black upon the primaries and their coverts; the tail-feathers barred transversely with black on a grey ground, which is so mottled as to bear a striking resemblance to the soft pencilling of many Sphingidæ; tail broad, very slightly rounded. The feathers of the head lax, and fur-like. Inner surface of the wings black, spotted with white. A streak of black runs on each side the throat, nearly parallel with and close to the gape; a bay tint prevails on the breast; and some of the feathers there have broad terminal spots of black, which are arranged in somewhat of a crescent-form, having irregular spots above it. Under parts pale grey unmottled. Every feather of the whole plumage is marked with a black stripe down the centre. Tongue sagittiform, wide at the horns, slender towards the tip, fleshy; reverted barbs along the edges. The volume of brain excessively small. Intestine 10½ inches; two cæca 1$\frac{1}{2}$ in. long, dilated at the ends.

by careless observers for the Chuck-will's-widow, though comparatively a silent species.

The Potoo is not unfrequently seen in the evening, taking its station soon after sunset on some dead tree or fence-post, or floating by on noiseless wing, like an owl, which the common people suppose it to be. Its plumage has the soft puffy, unwebbed character which marks that of the owls, and which prevents the impact of its wings upon the air from being audible, notwithstanding the power and length of those organs. Now and then it is seen by day; but it is half concealed in the bushy foliage of some thick tree, which it can with difficulty be induced to quit, distrustful of its powers by day. As it sits in the fading twilight it ever and anon utters a loud and hoarse *ho-hoo*, and sometimes the same syllables are heard, in a much lower tone, as if proceeding from the depth of the throat.

The first specimen that fell under my observation was shot in October. On several evenings in succession a large bird had been observed sitting on a particular post near Bluefields Tavern, where it remained undisturbed by passers looking at it, though it was not half a stone's cast from the road-side. At length Sam shot at it, and blew out many feathers, but it flew slowly off to the woods; uttering, the instant after it was shot, a low croaking. The next evening he watched again, and about sunset the bird returned to the same post, when he secured it. It is interesting to observe the similarity in habit to the Flycatchers in selecting a prominent station, and returning again and

again to it, even after such annoyance. It was one out of many posts of a rail-fence, yet the bird uniformly chose the same. Another was given me a few weeks afterwards, which had been struck down with a stone, as it was sitting on a tree in the yard around a negro's house. It had been in the habit of stationing itself there every evening, and its cries, which were described to me as resembling the mewing of a cat in pain, were so plaintive, that they seem to have acted on the good woman's superstition, who begged her husband to kill it. I incline to think, however, that the voice here mentioned was not that of the Potoo, but of an Eared Owl which may have been near it, but in the darkness unobserved. This specimen lived a day or two in the house, after it was knocked down, and when it died it was brought to me. I found its stomach, a muscular gizzard, distended with large beetles, (*Megasoma titanus*,) disjointed. That of the former contained two specimens of a black *Phanæus*.

Another, a male, shot in the day time, in February, had the stomach hard stuffed with fragments of insects, which, on being dispersed in water, I found to consist wholly of beetles, among which limbs of *lamellicorns* were conspicuous, probably *Phanæus*. In this case the stomach was more membranous; the œsophagus very wide and substantial as in the Owls, but there was no dilatation or proventriculus.

About the same time a living and uninjured specimen was given me, taken in a wooded morass.

This I kept some days. It would sit anywhere that it was placed, across the finger, or across a stick; never *lengthwise*, though I repeatedly tried it so. Its position in sitting was quite perpendicular, (that is, from head to tail,) the plumage a little puffed out, the head drawn in, the eyes usually shut. When pushed, however, it lengthened the neck to retain its balance, and opened its eyes, which being so large, and the irides of a brilliant yellow, combined with the wide gape to give it a most singular physiognomy. Usually it seemed absolutely blind by day, for when the eyes were wide open, the approach of any object within a line of the pupil, and the moving of it to and fro, produced, in general, not the slightest effect. Once or twice, however, I observed that when the pupil was greatly dilated, as it always was when the lids were first unclosed, the sudden motion of my hand towards the eye, caused the pupil to contract with singular rapidity to less than one fourth of its former dimensions. Afterwards by candle-light, I observed the extraordinary rapidity and extent of this contractility more fully. When the candle was little more than a yard distant, the pupil was dilated to about ¾ths of an inch diameter, occupying the whole visible area of the eye, the iris being reduced to an imperceptible line; on bringing the candle close to the pupil, it contracted to a diameter of two lines, and that *completely within the period* required to convey the candle by *the most rapid action of my hand practicable.*

As night approached I expected that it would become animated; but it did not stir, nor shew any sign of vivacity, though I watched it till it was quite dark. Several times in the evening I went into the room, up to ten o'clock, but it was where I had left it. About three in the morning I had occasion to go in again with a candle; the Potoo had not altered his position, and when the day came, there he was unmoved, nor do I believe he had stirred during the whole night. Thus he remained during the next day; I put his beak into water, and let fall drops upon it, but he refused to drink: I then caught beetles (*Tenebrionidæ*) and cockroaches, but he took no notice of them; and though I repeatedly opened his beak and put the insects into his broad and slimy mouth, they were instantly jerked out by an impatient toss of his head. Towards this evening, however, he began to glower about, and once or twice suddenly flew out into the midst of the room, and then fluttered either to the ground, or to some resting place. Many little *Tineæ* were flitting around my dried bird-skins, and I conjectured that he might be capturing these, especially as when at rest his eye would now and then seem to catch sight of some object, and glance quickly along, as if following its course. The statement of Cuvier, that "the proportions of the Nyctibius completely disqualify it from rising from a level surface," I saw disproved; for notwithstanding the shortness of the tarsi, (and it is, indeed, extreme,) my bird repeatedly alighted on,

and rose from, the floor, without effort. When resting on the floor, the wings were usually spread; when perching, they about reached the tip of the tail. If I may judge of the habits of the Potoo from what little I have observed of it when at liberty, and from the manners of my captive specimen, I presume that, notwithstanding the powerful wings, it flies but little; but that sitting on some post of observation, it watches there till some crepuscular beetle wings by, on which it sallies out, and having captured it with its cavernous and viscid mouth, returns immediately to its station. Mr. Swainson appears to consider that the stiff bristles, with which many *Caprimulgidæ* are armed, have a manifest relation to the size and power of their prey, beetles and large moths, while these appendages are not needed in the swallows, their prey consisting of "little soft insects." (Class. Birds.) But here is a species, whose prey is the hardest and most rigid beetles, of large size, and often set with formidable horns,—which has no true rictal bristles at all!

Finding that my Potoo would not eat, and feeling reluctant to starve it, I killed it for preparation. In depriving it of life, I first endeavoured to strangle it by pressure on the trachea, but I found that with all the strength of my fingers, I could not compress it so as to prevent the admission of air sufficient for respiration. I was obliged, therefore, to apply one or two smart blows on the head with a stick. While giving it these death-blows, much against my feelings, it uttered, on

being taken up by the wings, a short, harsh croaking. With this exception, it was absolutely silent all the time I had it; never resenting any molestation, save that when irritated by the repeated presentation of any object, as the corner of a handkerchief, it would suddenly open its immense mouth, apparently for intimidation; yet it made no attempt to seize anything. The stomach, notwithstanding three or four days' fast, was crammed with fragments of beetles, among which were the horns of a large *Dynastes*, that I had not met with. I may mention that the sclerotic ring of the eye consists of distinct plates (see Pen. Cyc. xvi. 225,) thirteen in number, varying in dimensions, and not perfectly regular in form.

I afterwards kept a living Potoo for ten days; but its manners were exactly the same as above, pertinaciously refusing to eat. Mr. Hill, however, had one which greedily ate large cockroaches that were thrown to it.

It is remarkable that among a people whose most striking feature is the great development of the mouth, the Potoo has become a proverb of ugliness. The "most unkindest cut of all" that a negro can inflict upon another, on the score of personal plainness, is "Ugh! you ugly, like one Potoo!"

I have seen that which serves this bird for a nest: it is simply a round, flat mat, about five inches wide, and little more than one thick, composed of the fibrous plant called Old man's beard (*Tillandsia usneoides*). It was found on the ground on a spot whence the Potoo had just risen: it is in the pos-

session of Mr. Hill, to whom I am indebted for the following interesting observations.

"White's conjecture of the purpose to which the serrated toe of the Nightjar is applied, namely, the better holding of the prey which it takes with its foot while flying, would have been more than rendered highly probable by an inspection of the foot of the Nyctibius. The inner front toe and the back toe are spread out by the great extension of the enveloping flesh of the phalanges, to such a breadth as to give the foot the character and form of a hand; while the movement of these prehensile organs is so adjusted that the back toe and the three front toes, pressed flat against one another, can enclose anything as effectually as the palms of the hands. The [claw of the] middle toe, which is serrated in the Caprimulgus, is simply dilated in the Nyctibius, a peculiarity also of the swallows. Whatever deficiency of prehension this may give it, when compared to the power of the serrated nail of the Caprimulgus, is amply compensated for in the Nyctibius, by the palm-like character of the foot, by the extraordinary expansion of the toes, and by the quantity of membrane connecting them together. All this would be a mere waste of power if it did not perform some function like that which White assigned to the foot of the Nightjar.

"The feathers of the head, but especially those around the dilated gape, are of a peculiar structure. The covering of this part appears at first sight a mixture of hair and feathers, but upon close inspection, it is found to be composed of a loosely woven

plumage, in which the shaft of each feather is prolonged into a pliant filament of great length. It is this texture which gives the character of intermingled hairs to the feathers around the mouth. This tendency in the shafts and in some of the webs also to terminate in filaments is very prevalent in the plumage of the Nyctibius, each of the feathers of the tail having this sort of termination."

The Potoo is a permanent inhabitant of Jamaica; it is common in the lowlands of the south side, and probably is generally distributed in the island: it is found also in Brazil, for I am quite satisfied that Mr. Gould's *N. Pectoralis* is not specifically distinct from ours.

WHITE-HEADED POTOO.*

Nyctibius pallidus.—MIHI.

THE description below I have quoted (somewhat abridged) from Robinson's MSS., who has given

* "Length 11 inches, expanse 22, rictus 1⅝, beak from feathers to tip ⅝, flexure 6, tail 3¾.

"The nostrils prominent, tubulated, and covered with a membrane; from the nostrils runs a deep groove or furrow towards the tip. The beak was bent like the end of an Owl's, and when closed was longer than the under mandible; the latter was of a subulated form, shorter and bending in a contrary direction to the upper one: it was broader than the upper; its margins were inverted, and received the upper one exactly, when closed. There were no bristles on the angle of the mouth. The tibiæ [tarsi?] or shank-bones are shortened into a heel, so that the measure of what is usually called the leg, from the bend of the knee to the

an elaborately coloured figure of the species in his drawings. I have never met with it, but I think Mr. Hill has; for he has assured me of the existence of two true Nyctibii in Jamaica, besides the common Potoo; and two Caprimulgi, besides the Piramidig. I knew not exactly which species are alluded to in the following extract from a letter of Andrew Gregory Johnston, Esq., of Portland parish, a mountain region, to Mr. Hill. "We have two birds called Patoo; one white, the other brown. The first resembles the Scritch-Owl of Europe; the last is smaller; it is dark brown, and makes a noise by night, (and occasionally by day) half guttural, half pectoral or ventral, sounding the monosyllable *wow*, at short intervals. I have seen a brown Patoo

first joint of the middle toe is only $\frac{3}{8}$ of an inch. The length of that part which ought to be called the leg, [tibia?] is $1\frac{1}{2}$ inch, and the bone of the thigh 1 inch. Toes four, three before, one behind; covered with ash-coloured scales, very flat beneath, and all connected by narrow membrane. Claws brown, strong, gently curved and compressed; middle claw thinned to an edge on the inner side, but not serrate. Tail of ten feathers, equal, broad, rounded, barred with blackish and grey, and these bars again marked with less black bars. Wing quills coloured chiefly like the tail, but deeper; secondaries edged with clay-colour; winglet and long coverts immediately beneath it, black, with a few whitish bars; greater coverts black, edged with clay-colour; the next row of coverts whitish, with black shafts; the next row black, making a large triangular black spot in the expanded wing. Eyes very large, irides bright yellow. Head, neck, and throat white, with black shafts; above each eye some black and white streaked feathers in an erect position, forming two small roundish rings. On the breast, clay-coloured feathers with black shafts, and black spots. Sides, belly, and vent, white with black shafts. A line of black feathers down the middle of the back; rump ashy, with narrow black shafts. On shoulders a mixture of ash and clay-colour, with black shafts. Plumage very loose. Weight 3 oz. 7 sc."

taken by a negro boy in mid-day from a branch of a mango tree, with a noose fastened to a short stick. It was young, but a flier. Its mother came to look for it, and we caught her, and kept her some days. When liberated she would not move off many yards from the house, but was seen daily for a few weeks. When a prisoner it would eat cockroaches thrown down to it, and if handled was cruel and spiteful, otherwise quiet and apparently very gentle. There are plenty of them here. I listen to their sulky *wow*, often in the watches of the night."

Perhaps the present species may be "the small wood Owle" of Sloane, ii. 296.

FAM.—HIRUNDINIDÆ.—(*The Swallows.*)

RINGED GOWRIE.*

Acanthylis collaris ?

? Cypselus collaris, PR. MAX.—Temm. Pl. col. 195.

"As this bird seldom alights, it is furnished with two supernumerary bones, which are placed on the superior and exterior part of the leg; the skin that covers them is of an obscure flesh-colour; they are of an oblong ovated form, one fourth of an inch

* "Length 8½ inches, expanse 20, wings reaching 2¼ beyond the tail, tail 3, rictus ⅝, beak from feathered part to tip ⅜, tarsus ⅝, middle toe ½, claw ⅜, inner toe equal to the middle one.

"Irides deep hazel ["blacker than the pupil," Mr. Johnston;] beak black, polished, a little hooked; nostrils large, oval: eyes large, deep

long; and as the bird hangs upon a wall, rock, &c., by his claws, these bones are pressed close to it, and the leg thereby secured from harm.

"The tail consisted of ten feathers, which, when expanded, formed a large segment of a circle, somewhat pointed at their ends; the innermost ones broadest. It is remarkable in this bird, that the tail-feathers have naked shafts after the manner of the woodpeckers, and adapted to the same use; for the shafts, being remarkably strong and elastic, even to their points, help to support the birds in their pendent situation, till they get fast hold by their claws, if there is any to be got: if not, they can, by means of their tail, fling themselves back, and recover their wings quickly, which might be difficult for them to do were the shafts of the tail less strong. The points are not only naked but sharp.

"Mr. Long had this bird alive. I set it upon the floor; it crept along with its legs bent, leaning upon the aforesaid bones, but was not able to raise itself upon its feet; its legs were not so thick as those of our great English Swift. It was remarkably broad-shouldered, measuring *two inches* from pinion to pinion; its head was one inch broad between the eyes. It resembled the *Caprimulgus* of Edwards

sunk in the head, with remarkably large eyebrows; toes three before and one behind, covered as well as the tarsi with blackish purple scales; claws black, polished, hooked, and compressed; tibia feathered to the tarsus. Head, throat, wings, tail, and belly brown; the back and tail more inclining towards black, as also the long quill-feathers. The breast partly white, which was continued round the neck, like a ring: the head large, like that of Edwards's Whip-poor-will. Fore part of the eyebrows tipt with white."

in the form of its beak and body, as also in *the largeness of its eyes.* Its feathers were all glossy.

"When the tail is half-spread it forms a straight line at the end; when more, a curve like a fan. When by any accident this bird falls to the ground, it creeps or scrambles to some rock or shrub, where bending its tail and expanding its wings, it elevates its body, and at the same time throwing its legs forward, catches hold of the rock, &c., with its claws, and climbing up to a proper height, throws itself back and recovers its wings.

"This bird was brought to me March 5th, 1759; it had fallen from a tree by some accident, and was taken up by a negro, before it could recover."

The above notes in some degree arranged, and slightly abridged, I quote from Robinson's valuable MSS., who was evidently much interested in the bird he has so minutely described. That interest I myself felt in no small degree, on reading his notes, as there appear manifest indications of an intermediate link between the diurnal and nocturnal Fissirostres. It was therefore with very much pleasure that I saw on the 4th of last April, what I believe to have been the present species. At Content, in St. Elizabeth, as evening approached, *after a little rain,* swallows of three species were careering around the mountain: the White bellied Swallow and the Palm Swift were numerous, and among them was a very large black species, with a white collar, rather less numerous, prodigiously rapid in flight. I vainly endeavoured to shoot it. A fortnight afterwards, about half an

hour before sunset, *after rain,* the Piramidigs which first appeared were presently joined by the great collared Swift, which careered with them in numbers. Again, about 11 o'clock in the forenoon, in May, three of these birds swept overhead, heavy rain already falling on the mountain, and beginning to reach the spot where I was. My lad Sam, one day about noon, observed as many as a dozen passing in a flock, in straight and rapid course, when black clouds, already gathered round the mountain brow, threatened rain, which however passed away to leeward. A few days after, a little earlier in the day, and *in exactly similar* weather, or rather amidst the first large drops of a heavy rainstorm, he saw three flying so low as nearly to skim the ground; two pursuing in mazy course a third, from which proceeded, now and then, a singular vibratory sound, which Sam imitated by the word "churr." This singular sound, which again reminds one of the Goatsuckers, was also uttered by two, which, about the same season and hour, and in similar weather, were careering swiftly over Bluefields towards the mountain peaks.

Having mentioned the occurrence of this bird to my notice, in a letter to Mr. Hill, he favoured me with the following interesting account of his own acquaintance with the species. "* * * The month was March, the early part of March, when the bleak northerly winds of February had exhausted and blighted all vegetation, and the lower range of the St. Andrews mountains, with their steep and angular declivities walling in the plains,

were looking as seared as if a simoom had blasted them. The pastures below were destitute of herbage, but the adjacent cane-fields were sufficiently green to relieve the arid aspect of the mountains, and give the air of cultivation to the plain. Myself and the friend with whom I travelled had waited in Kingston till *an afternoon shower* had fallen. The sun was just setting when we had got within the last mile of our journey. We had completely headed the extremity of the Long mountain, and were quite within the plain, encircled, as it there seems, by hills and uplands. The air was pleasant and fresh;—the earth sent up its reeking odour, musky and strong;—the road was splashy, and here and there stood puddles in the grassless savannas. Lighted by the level sunbeams the whole landscape was brilliant, and the masses of recent rain-clouds that were uprolled, but gathered low on the mountains before us, were luminously golden and crimson. The deep, desert bed of the Hope river was right in our view. Here, all of a sudden, we found ourselves coursing our way through a hundred of the White-collared Martin, and they seemed to spread all over this corner of the plain in similar numbers. The extraordinary size of the birds, the easy but rapid glide of their flight, just over the cane-fields and savannas, not at a greater height than just above our horse, when they crossed and re-crossed the road, sweeping so near to us as to tempt us to strike at them with the chaise-whip, were very remarkable incidents in a first acquaintance with

them. I was able to see the whole character of their form and colouring, 'great black Martins, with a white collar,' as your letter delineates them. They continued quartering over the fields, till the sunlight had left the plains, or was only reflected by the mountains and their piles of roseate clouds. The rain had brought all insect-life to the moist surface of the earth, and these birds were following their congregated swarms to the wet savannas. They sometimes stooped to the puddles, and shot past with a twitter that very much reminded one of the summer play of their smaller sized congeners.

"I have seen the same bird twice or thrice since, but in threes or fours only, and, always, only near rocky and unfrequented hills. Another friend, who drew my attention to them in consequence of their numbers after rains, in his neighbourhood, lived among large open savannas and salt-ponds, near the low range of rocky and sterile mountains, which our maps call the Healthshire hills. He told me he had traced them to the caverns in those mountains, in which he felt assured they nestled in hundreds. This is the nearest to any precise information, I ever could get of their haunts and habitations."

I am not alone in thinking these birds difficult to shoot; a gentleman who resides near Kingston, having observed them at his residence one evening, the last spring, and kindly wishing to supply me with a specimen, though an expert shot, fired five times unsuccessfully at them. Yet I am not without

hope of obtaining specimens, particularly through the politeness of Mr. A. G. Johnston of Portland. In answer to some observations of Mr. Hill's, this gentleman writes, "The ring-necked Swallow abounds here, and flies all day, just as the other Swift does. Flocks of a hundred or two of each, wheel and scream about us before a shower. I have a specimen before me, which I stuffed sixteen years ago, pretty perfect yet, but I propose to shoot you some fresh birds. I find no difficulty in bringing them down, but I never saw one alight or perch anywhere."

It is with doubt that I identify this bird with the "White-necked Martin" of Temminck, found by the Prince de Nieuwied in his voyage to Brazil. He states it to be very common in the environs of Rio Janeiro, and in all the districts of that province, where "*it is found among rocks.*" Perhaps it is Hirundo 3, of Browne.

When the above was just going to press, I received from Mr. Hill information that a specimen of this bird had been obtained by Mr. Johnston. A careful drawing of the left foot accompanied it, with the following note. "The legs are curiously constructed: the tarsus cannot *extend* further than here represented, [viz. forming an angle with the tibia, of 28°] nor can it be straightened, so that it corresponds with the tail feathers, and keeps the bird in an upright position against vertical rocks and trees." Mr. J. ascertained that from this formation, the bird cannot stand erect on the ground, nor can it apparently walk; and he has

been told that cattle-boys and fishermen in Portland both say that they have taken young ones of this species *clinging* to the vertical honey-comb rocks, against whose base the sea dashes. As the specimen thus procured is kindly destined for me, I hope to speak still more definitely, if it arrive in time, in an appendix. Perhaps it may form a new genus.

Mr. Johnston's little boys, familiar with Peter Wilkins's story, have been accustomed to call these birds *Gowries;* because of the rushing noise they make with their wings; a noise that is heard even when they sweep by, far overhead. I have adopted this appellation.

PALM SWIFT.*

Tachornis phœnicobia.—MIHI.

THIS delicately-formed little Swift, conspicuous even in flight, from the broad belt of white across

* TACHORNIS. *Generic Character.*—Bill very short, depressed, gape very wide, the sides suddenly compressed at the tip, which is curved; the margins inflected: nostrils, large, longitudinal, placed in a membranous groove, the margins destitute of feathers. Wings very long and narrow; first quill tapered to a point: second longest. Tail slightly forked, a little emarginated. Tarsi rather longer than middle toe, feathered. Toes all directed forwards, compressed, short, thick, and strong, with compressed claws. Sternum immarginate, but with three foramina, one through the ridge, and one on each side.

Length $4\frac{2}{10}$ inches, expanse $9\frac{4}{10}$, flexure 4, reach of wings beyond the tail $\frac{9}{10}$, tail, outer feathers $1\frac{7}{10}$, uropygials $1\frac{3}{10}$, rictus $\frac{5}{10}$, beak $\frac{3}{20}$, tarsus $\frac{1}{4}$, middle toe rather less than $\frac{1}{4}$.

the black body, is a very common species in Jamaica, where it resides all the year. Over the grass-pieces and savannas of the lowlands, the marshy flats at the seaward mouths of the valleys, as well as the pens of the mountain slopes, this swift-winged sylph daily urges its rushing course in parties of half-a-dozen to fifty or a hundred, often mingled with other Swallows, performing mazy evolutions, circling and turning, crossing and recrossing, now darting aloft, now sweeping over the grass, till the eye is wearied with attempting to follow them. The length of its wings, which is scarcely less than that of the whole bird,—renders it a fleet and powerful flier; an attentive observation will be able to identify it, when mingling in aerial career, by a more frequent recurrence of the rapid vibration of the wings, the momentary winnowing, by which a fresh impetus is gained. There is a very interesting structure in the sternum of this bird, which as far as I know is unprecedented. The sternum, though void of emarginations, possesses two oblong foramina of large size, one on each side of the middle of the ridge, and a round one perforating the ridge itself near

Irides dark hazel; beak black; feet purplish flesh-colour; claws horn-colour; inside of mouth, flesh-colour, tinged in parts with bluish. Head smoke brown, paling on the sides; back, wings, tail-coverts, and tail, sooty-black, unglossed, or with slight greenish reflections on the tail. Across the rump a broad band of pure white, the black descending into it from the back, in form of a point; sometimes dividing it. Chin and throat silky white, the feathers brown at the base; sides smoky-black, meeting in a narrow, ill-defined line across the breast; medial belly white. Thighs, under tail-coverts, and inner surface of wings smoky-black.

the front margin. As all three are closed by the usual membrane, the object may be, the decrease of weight by the abstraction of bone, while the surface for the attachment of the muscles of flight remains undiminished. It would be interesting to know whether this structure is found in the Collocaliæ of the Indian Archipelago, to which the present bird bears a strong outward resemblance.

The stomach of one, a female, which I dissected, shot while hawking among many others over Bluefields' grass-piece, in April, was distended almost to bursting with minute insects, which on being dispersed in water, and examined carefully with a lens, proved, I believe exclusively, the winged females of a small species of ant, exceedingly numerous, all more or less comminuted.

On the 20th of March last, visiting in company with Mr. Hill the estate called Dawkins' Saltpond, the residence of the Spanish Admiral, at the time of the conquest,—I observed several small Swallows flying above some cocoa-nut palms; they uttered, as they flew, a continued twittering warble, shrill but sweet, which attracted my attention. I commenced a careful search, with my eye, of the under surface of the fronds and spadices of one, and at length discerned some masses of cotton projecting from some of the spathes, which I concluded to be their nests. This conjecture proved correct; for presently I discovered a bird clinging to one of these masses, which I shot, and found to be this White-rumped Swift. On my lad's attempt to climb the tree, eight or ten birds flew in succession from

various parts, where they had been concealed before. The tree, however, was too smooth to be climbed, and as we watched beneath for the birds to return, one and another came, but charily, and entered their respective nests. Although several other cocoa-nuts were close by, I could not discern that any one of them was tenanted but this, and this so numerously, whence I inferred the social disposition of the bird. At some distance we found another tree, at the foot of which lay the dried fronds, spadices, and spathes, which had been, in the course of growth, thrown off, and in these were many nests. They were formed chiefly in the hollow spathes, and were placed in a series of three or four in a spathe, one above another, and agglutinated together, but with a kind of gallery along the side, communicating with each. The materials seemed only feathers and silk-cotton (the down of the *Bombax*); the former very largely used, the most downy placed within, the cotton principally without; the whole felted closely, and cemented together by some slimy fluid, now dry, probably the saliva. With this they were glued to the spathe, and that so strongly, that in tearing one out, it brought away the integument of the spathe. The walls of the nests, though for the most part only about a quarter of an inch thick, were felted so strongly, as to be tenacious almost as cloth. Some were placed within those spathes that yet contained the spadices; and in this case the various footstalks of the fruit were enclosed in a large mass of the materials, the walls being greatly thickened. All the nests were evi-

dently old ones, for the *Bombax* had not yet perfected its cotton, and hence I infer that these birds continue from year to year to occupy the same nests, until they are thrown off by the growth of the tree. The entrance to the nests, which were subglobular, was near the bottom.

Near the middle of May, my servant Sam, being engaged at Culloden, in Westmoreland parish, cutting the fronds of the palmetto (*Chamærops*) for thatching, found these little birds nestling in abundance, and procured for me many nests of the present season. Their recent construction, and perhaps the diversity of their situation—for instead of the hollow of a spathe, these were attached to the plaited surface of the fronds,—gave them a different appearance from the former specimens. Many of these I have now in my possession. They have a singularly hairy appearance, being composed almost exclusively of the flax-like cotton of the *Bombax*, and when separated, are not unlike a doll's wig. They are in the form of those watch-fobs, which are hung at beds' heads, the backs being firmly glued by saliva to the under surface of the fronds, the impressions of the plaits of which are conspicuous on the nests when separated. The thickness is slight in the upper part, but in the lower it is much increased, the depth of the cup descending very little below the opening. The cotton is cemented firmly together as in the case of the others, but externally it is allowed to hang in filamentous locks, having a woolly, but not altogether a ragged appearance. A few feathers are

intermixed, but only singly, and not in any part specially. One specimen is double, two nests having been constructed so close side by side, that there is but a partition wall between them. Many nests had eggs, but in throwing down the fronds all were broken but one, which I now have. It is pure white, unspotted, larger at one end, measuring $\frac{13}{20}$ inch by $\frac{9}{20}$. The average dimensions of the nests were about 5 inches high, and $3\frac{1}{2}$ wide.

The genus *Tachornis* seems intermediate between *Cypselus* and *Collocalia*, with considerable general resemblance to the latter. This species is perhaps Hirundo 1, of Browne.

BLACK SWIFT.*

Cypselus niger.

Hirundo nigra, GMEL.

THE description below is made from a dried skin in very poor order, but assisted by one of Mr. Hill's exquisite drawings, executed when the bird was recent. It was shot in 1843, near Spanish-town, in company with many others. I conclude it to be the

* Length $6\frac{1}{2}$ inches, expanse — ? flexure $6\frac{9}{10}$, reaching about 1 inch beyond the tail, tail outmost feather $2\frac{3}{4}$, uropygials 2, rictus $\frac{1}{2}$, beak from forehead $\frac{9}{10}$, tarsus $\frac{1}{2}$, middle toe $\frac{4}{10}$, lateral toes sub-equal, hallux opposite. Outmost tail-feathers sub-rounded, the rest elegantly emarginated. First and second quills equal, the rest graduated rapidly.

Irides —— ? beak and feet black. Whole plumage black, very slightly glossed with raven-grey, and greenish ; head and under parts approaching to smoke brown. The feathers of the forehead tipped with whitish ; a grey spot just behind the lower eyelid.

nigra of Gmelin and Latham, as the latter ornithologist attributes that species to St. Domingo as well as Guiana.

CAVE SWALLOW.*

Hirundo pœciloma.—MIHI.

MATURE consideration convinces me that this species is quite distinct from the *H. fulva* of Vieillot though closely allied to it. The present may be at once recognised by the conspicuous mottling of its shoulders and back with white and blue black, a character which, as far as I have examined, is invariable. The form of its nest also differs greatly from the bottle-like structures of the interesting bird of the Rocky Mountains.

The Cave Swallow does not appear to be in any degree migratory in Jamaica, being abundantly

* Length 5¼ inches, expanse 11, flexure 4, tail 1$\frac{17}{20}$, rictus $\frac{11}{20}$, beak along culmen $\frac{8}{10}$, tarsus $\frac{6}{10}$, middle toe $\frac{6}{10}$, lateral toes $\frac{8}{10}$, equal.

Irides dark brown; beak black, feet dark grey. Forehead dark chestnut; crown and hind head black, glossed with greenish-blue; cheeks, chin, and throat paler chestnut, separated from that of the forehead by the black passing over each eye to the nostrils; the chestnut of the throat runs up in a narrow collar round the neck; back variegated with blue-green, and white, each feather being white, with a dark tip; rump chestnut, the feathers sometimes having pale tips; tail-coverts and tail brownish black, the former having pale tips; tail nearly even; wings brownish black, the tertiaries *in some*, edged and tipped with white; breast and sides pale chestnut, the colour deepening in a crescent-shaped band across the breast; medial belly, white; under tail-coverts pale chestnut. First and second quills equal. Legs feathered to the tarsal joint. The sexes exactly alike.

Intestine 4 inches; two minute cæca ¾ of an inch from cloaca.

common at all seasons. It delights in the neighbourhood of caverns and overhanging rocks, in the hollows of which it builds its ingenious nest. About a mile from Bluefields, the sea washes a precipitous rock of no great height, on the summit of which is an old fort, with some great guns, which tradition ascribes to the old Spanish settlers, but now dismantled, and within and without overrun with spiny pinguins and logwood bushes, and tangled with creepers. I have no doubt that this was the site of the Spanish town Oristana, some remains of the houses of which may yet be seen in the provision ground of a negro peasant adjoining. The foot of the cliff is girt with irregular masses of honey-combed rock, between which the incoming tide rolls, and frets, and boils, in foaming confusion; and the front is hollowed into caves, some of which are long passages with an opening at each end, and others are merely wide-mouthed, but shallow hollows. In one of these I counted forty nests of this species of Swallow, each consisting of a half cup, built with little pellets of mud, retaining, in so damp a situation, and where the rock itself is covered with a slimy mouldiness,—their original humidity. Each was thickly lined with silk-cotton. If we imagine a pint basin divided perpendicularly through the middle, and the one-half stuck against a wall, we shall perceive the form of these nests; some, however, were both larger and deeper than this. In many instances advantage was taken of a slight hollow in the rock, which increased the capacity. In one, (it was about the middle of July,) I found three

eggs; in some others the callow young, and in one two full fledged birds, which lay quietly in the nest, side by side, while their black eyes watched my motions. The parent birds flew about in affright, occasionally coming close up to the nests, and hovering as if about to alight, but scarcely one ventured in. The eggs measure about $\frac{8}{10}$ inch long, and $\frac{11}{20}$ wide; they are white, studded with dots and spots of dull red; but in many eggs which I have examined there is much variation in size, form, and colour. The young birds scarcely differed from the adult.

In May, my kind friend Mr. Aaron Deleon, took me to a curious cavern, situated on the estate called Amity, some few miles from Savannah le Mar, but inland. Through its dark recesses a subterraneous river flows, so still and so perfectly transparent, that although two or three feet deep, I did not perceive that there was a drop of water there, but took the atoms floating on its surface, to be lodged in invisible spiders' webs, stretched across. Numerous Swallows were flying in and out, and the roof was studded with nests similar to those above described.

Though this little Swallow manifests a decided predilection for cavernous recesses, it does not confine itself to situations so recluse. In that part of the "King's House," at Spanish town, which is called the Arcade, where clerks are writing, and public business is transacted every day, great numbers of these nests are affixed to the beams and joists, and the birds are continually flying to and fro. Before the year 1838, they had built in the

Secretary's Office, from time immemorial; but it was not in consequence of any molestation there, that in the Year of Freedom, they chose the vice-regal abode. Did they then recognise the administrator of England's power as the friend of Jamaica?

In December, January, and February, the birds, though they fly in and out of the august abode without reserve, as if to maintain their right of way, do not make use of the nests; but all the rest of the year, these mud habitations are occupied. In March the old birds begin to repair and tenant their former nests; but the young, having no home ready made, are compelled to wait until the May rains have moistened the earth in the roads, to afford them mud for their structures.

But as soon as these seasonal changes have taken place, these birds may be seen congregated on the roads, in groups of fifty together, huddled at the edges of the pools formed by the daily rains, and in those places where the power of the morning sun has already evaporated the water, and the mud has begun to acquire a stiffness of consistence, which probably is more suitable for moulding to their nests. As they alight to pick up the pellets, their wings are held nearly perpendicularly over the back, and they are incessantly fluttering about, apparently hindering one another by their crowding. Many may be seen engaged, where the pools are a little wider, or where the streams that cross the road dilate into a broad surface, in sweeping backward and forward over the water, which at every turn they just kiss with their beaks. I know not whether they are drinking, or capturing minute surface insects.

GOLDEN SWALLOW.*

Hirundo euchrysea.—MIHI.

THIS exceedingly lovely little Swallow, whose plumage reflects the radiance of the Humming birds, is found, as I am informed by Mr. Hill, in the higher mountains formed by the limestone range of the very centre of the island, as in Manchester, and St. Ann's. It is not until we ascend this central chain, that we meet with this sweet bird, occasionally in the more open dells, but principally confined to the singular little glens called cock-pits.

The description is from a dried specimen in my possession, kindly presented by Mr. Hill.

* Length $4\frac{6}{10}$, expanse —? flexure $4\frac{1}{10}$, tail $1\frac{5}{10}$, rictus $\frac{5}{10}$, beak along culmen $\frac{8}{10}$, (nearly,) tarsus $\frac{4}{10}$, middle toe $\frac{5}{10}$, (nearly,) lateral toes $\frac{3}{10}$, equal.

Irides —— ? beak black; feet purplish-black. Whole upper parts metallic green, most splendidly glossed with golden as in many Humming-birds. Wing quills and tail have less gloss, and the inner webs are dull black. The tertials and the greater coverts have a well defined band along the outer edge, of rich golden red, and the middle and smaller coverts have a ribbon-like border of emerald green. The green of the head descends around the rictus to the chin. Throat, breast, belly, vent, and under tail-coverts, pure white, soft and downy. First quill longest. Leg feathered to the tarsus. Tail slightly forked.

GREAT BLUE SWALLOW.*

Progne Dominicensis.

Hirundo Dominicensis, LINN.
Hirundo albiventris, VIEILL. Ois. Am. pl. 28.

As closely allied to the Purple Martin, in manners, as in form and colouring, I long mistook the present bird for that well-known species, as I think others have done also. The white belly is, however, a sufficient mark of distinction. It is very common, at least in the lowlands and inferior mountain ranges, during the summer; some remain with us through the winter, but as there is a very marked diminution of their numbers, I conclude that a large body of them migrate on the approach of that season, probably to Central America. About the end of March we see them in great numbers, assembled early in the morning on the topmost branches of the lofty cotton trees, which at that season are leafless. On these they crowd so closely, side by side, that I have known five to be killed at one discharge. In the autumn we observe exactly the same habit. Perhaps we may trace some analogy here to those periodical congregations of other species which are known to be connected with migration.

* Length 8 inches, expanse 15¼, flexure 5½, tail 2, rictus $\frac{12}{20}$, beak along culmen $\frac{5}{10}$, tarsus $\frac{12}{20}$, middle toe $\frac{18}{20}$, hind toe $\frac{5}{10}$, outer toe slighter longer than inner.

Irides dark hazel.

It is a remarkable fact, that of the seven species of Swallows and Swifts which summer in North America, all of which are stated to migrate to the southward before winter, not one should have occurred to me in Jamaica. Although every day through the winter months, my almost undivided attention was given to birds; and though from August to April about thirteen hundred specimens of birds fell into my hands, more than one thousand of which were shot by myself and my servants, not a single individual of a North American species was observed among them. I simply state the fact, leaving any one to draw his own inferences.

At the same time, I should observe, that Mr. Hill thinks that *Acanthylis pelasgia* visits Jamaica in its periodical migration. Referring to an incident which he had mentioned to me before, he says, "The migratory *hirundines*, whose squadrons moving in circles, I gave you a sketch of in March last, as seen by me at that time passing over us from south to north, (and I have observed them yearly either in that month or in April,) I conclude to be flocks of *pelasgia* on their passage to their summer homes northward, after wintering in the tropics. The circular movement of the migratory retinue; the direction of their flight; their known wintering on the neighbouring intertropical shores; their association at all times in multitudinous numbers; and the cry with which they announce their passage, as they leisurely course round,—*tsippee, tsippee, tsippee,* seem to me so many identifications of this species."

The Blue Swallow has the same propensity to

bring up his family in darkness, as his purple brother. The stipe of an old palm, whose porous centre decays, while the iron fibres of the exterior remain strong, is his ordinary resort. At the beginning of April, I observed several pairs flying in and out of holes, bored I suppose by the Woodpecker, in the stipe of a dead Cocoa-nut still tall and erect, but a mere leafless post, tottering in the breeze and ready to fall. At the middle of May, Sam observed several pairs entering a round hole, about two inches in diameter, beneath the eaves of Belmont house.

Near the end of June, when on my way in a coasting boat from Bluefields to Kingston, I was lying wind-bound in Starvegut Bay. There the inhospitable shore is strewn with immense fragments of limestone rock, honey-combed and fretted into holes, through which the surf breaking furiously, finds vent in perpendicular jets and spouts of water, or in columns of spray resembling steam from an engine-pipe, accompanied with crashing roar. Yet I observed with interest, that the Blue Swallows were frequenting these rocks, and I noticed one repeatedly going in and out of a small hole near the summit of a rugged mass, separated from the shore, and completely isolated by the boiling surf. Lansdown Guilding, in some notes on the Zoology of the Caribbean Islands, (Zool. Jour. III. 408,) observes, "We have but few of this family in St. Vincents: among them is a Swallow, which roosts, and I believe builds, in the rock of the sea-shore. It is curious," he adds, "to observe the bird in calm

weather skimming patiently along the sea in search of insects, evidently ignorant of the fact that they are confined to fresh water, and do not sport on the surface of salt waters." I cannot agree, however, with this accomplished naturalist here: that the Swallows do occasionally skim over the sea, is undeniable; and that gnats and other minute insects are also in the habit of frequenting the salt water, though not in such numbers as over the fresh ponds and rivers, is no less certain, at least in Jamaica.

FAM.—TODIDÆ.—(*The Todies.*)

GREEN TODY.*

Todus viridis.

Todus viridis, LINN.—Nat. Lib. (Flyc.) vign.
? *Todus multicolor*, LAFRESN.

IN all parts of Jamaica that I have visited, the Tody is a very common bird. On the summit of

* Length $4\frac{1}{4}$ inches, expanse $6\frac{1}{2}$, tail $1\frac{6}{10}$, flexure $1\frac{8}{10}$, rictus $\frac{19}{20}$, tarsus $\frac{6}{10}$, middle toe $\frac{5}{10}$.

Irides very pale grey; pupils very large; beak above horny red, beneath pale crimson; legs and feet reddish brown; sometimes flesh-colour, or purplish-horn. The sexes exactly alike.

I doubt much if *Todus multicolor* of Lafresnaye, figured in D'Orbigny's Birds of Cuba, is specifically different from this; the slight distinctions of hue being scarcely more than variations which I have found in Jamaican specimens; some of which, in my possession, display the pale blue on the sides of the throat, and the orange on the flanks.

Bluefields mountain, about three thousand feet from the level of the sea, and particularly where the deserted provision-grounds are overgrown with a thicket, almost impenetrable, of jointer, or joint-wood (*Piper geniculatum*), it is especially abundant. Always conspicuous from its bright grass-green coat, and crimson-velvet gorget, it is still a very tame bird; yet this seems rather the tameness of indifference than of confidence; it will allow a person to approach very near, and, if disturbed, alight on another twig a few yards distant. We have often captured specimens with the insect net, and struck them down with a switch, and it is not uncommon for the little boys to creep up behind one, and actually to clap the hand over it as it sits, and thus secure it. It is a general favourite, and has received a favourite name, that of Robin Redbreast. There is little resemblance, however, between the West Indian and the European namesakes. I have never seen the Tody on the ground; but it hops about the twigs of low trees, searching for minute insects, occasionally uttering a querulous, sibilant note. But more commonly it is seen sitting patiently on a twig, with the head drawn in, the beak pointing upwards, the loose plumage puffed out, when it appears much larger than it is. It certainly has an air of stupidity when thus seen. But this abstraction is more apparent than real; if we watch it, we shall see that the odd-looking grey eyes are glancing hither and thither, and that, ever and anon, the bird sallies out upon a short feeble flight, snaps at something in the air, and returns to his twig

to swallow it. It is instructive to note by how various means the wisdom of God has ordained a given end to be attained. The Swallow and the Tody live on the same prey, insects on the wing; and the short, hollow, and feeble wings of the latter, are as effectual to him, as the long and powerful pinions are to the Swallow. He has no powers to employ in pursuing insects, but he waits till they come within his circumscribed range, and no less certainly secures his meal.

I have never seen the Tody eating vegetable food; but I have occasionally found in its stomach, among minute coleopterous and hymenopterous insects, a few small seeds. One, which I kept in a cage, would snatch worms from me with impudent audacity; and then beat them violently against the perch or sides of the cage to divide, before he swallowed, them.

One, captured with a net in April, on being turned into a room, began immediately to catch flies, and other minute insects that flitted about, particularly little destructive *Tineadæ* that infested my dried birds. At this employment he continued incessantly, and most successfully, all that evening, and all the next day from earliest dawn to dusk. He would sit on the edge of the tables, on the lines, on shelves, or on the floor, ever glancing about, now and then flitting up into the air, when the snap of his beak announced a capture, and he returned to some station to eat it. He would peep into the lowest and darkest corners, even under the tables, for the little globose, long-legged spiders,

which he would drag from their webs and swallow. He sought these also about the ceiling and walls, and found very many. I have said that he continued at this employment all day without intermission, and, though I took no account, I judged that, on an average, he made a capture per minute. We may thus form some idea of the immense number of insects destroyed by these and similar birds; bearing in mind that this was in a room, where the human eye scarcely recognised a dozen insects altogether; and that, in the free air, insects would doubtless be much more numerous. Water in a basin was in the room, but I did not see him drink, though occasionally he perched on the brim; and when I inserted his beak into the water, he would not drink. Though so actively engaged in his own occupation, he cared nothing for the presence of man; he sometimes alighted voluntarily on our heads, shoulders, or fingers; and when sitting, would permit me at any time to put my hand over him and take him up; though, when in the hand, he would struggle to get out. He seemed likely to thrive, but incautiously settling in front of a dove-cage, a surly Baldpate poked his head through the wires, and with his beak aimed a cruel blow at the pretty green head of the unoffending and unsuspecting Tody. He appeared not to mind it at first, but did not again fly; and about an hour afterward, on my taking him into my hand, and throwing him up, he could only flutter to the ground, and on laying him on the table, he stretched out his little feet, shivered, and died.

The inhabitants of Jamaica are not in the habit of domesticating many of the native birds; else this is one of the species which would become a favourite pet. In a state of liberty, however, it attracts the admiration, even of the most unobservant, and an European is charmed with it. As it sits on a twig in the verdure of spring, its grass-green coat is sometimes undistinguishable from the leaves in which it is embowered, itself looking like a leaf; but a little change of position bringing its throat into the sun's rays, the light suddenly gleams as from a glowing coal. Occasionally, too, this crimson plumage is puffed out into a globose form, when its appearance is particularly beautiful.

The tongue is fleshy for but a small part of its length, the remainder consisting of a flat, or slightly concave, transparent, horny lamina; just like a cut from the side of a quill; it is seen, under a lens, to be snipped at the edges, into very minute and close-set barbs pointing backwards. The skin is exceedingly thin, and so tender, as to render it a very difficult task to prepare a specimen.

The Tody, as has been long known, builds in holes in the earth, in the manner of the Kingfisher. Near Scott's Cove, I was shown, by the side of the deep road, holes in the clay, which were said to be the nesting holes of the "Robin." And near Spanish Town, a friend pointed out a hole in a bank in his own garden, in which a Tody was then building, in March. But, as I have never seen the nest or eggs, I am indebted to the notes of Mr. Hill for a detailed description.

"The Green Tody is a bird of peculiar structure, and peculiar habits. It is exclusively an insect feeder, and burrows in the earth to breed. The banks of ravines, and the scarps of dry ditches, are excavated by its feeble feet, in which two out of three of its front toes are united together, leaving only the terminal joint free, and hence the feet of this kind of birds are called *syndactylous*. The hole runs into the banks some eight inches or a foot: at the extremity of this subterranean lodging, it nestles in secrecy and security.

"As the subterranean nest is made wherever there is friable mould easy of excavation, — ravines and gullies, whose banks are earthy, and where the water passes off rapidly from the surface-soil, are generally selected for breeding. These gullies are sheltered from exposure to the drift rain by opposing banks, or they are covered by over-hanging shrubs. The excavation is made by means of the beak and claws. It is a winding gallery, rounded at the bottom, and terminating in a sufficiently wide lodging, lined with pliant fibres, and dry moss and cotton, placed with some attention to arrangement. Four or five grey, brown-spotted eggs are laid, and the young are fed within the cave till they are full-fledged.

"The combination of circumstances that make up a fit nestling place for it, may be well understood from the following selection of a burrow, by a pair of birds, in the garden of a friend. A box filled with earth had been placed on tressels within water, for growing lettuces from seed, or rather for saving

the seed, whilst vegetating, from the depredations of ants. The box had performed its office; — the lettuces had been transplanted, and the mould remained in undisturbed fallow. The box having a knot-hole in the side, through this hole a pair of Todies burrowed a gallery into the heart of the mould, built a nest, and reared a family of young ones. They were assiduous sitters, the male and female relieving each other. Though they attracted a good deal of attention, and were not unfrequently disturbed by the curiosity of visitors, they steadfastly pursued their family affairs, and showed surprising vigilance and caution in escaping out of their cavern, when they were either watched, or attempts were made to catch them. They never failed to profit by the moment when attention was withdrawn from them, either to come from out of their cave, or to dart into it. On opening the earth after the young had fled, there was found a capacious winding gallery into the centre of the box, ending in a circular lodging, in which was contained the nest, composed of fibrous roots and cotton.

"There is such an obvious similarity between the Kingfisher and the Tody, particularly the brilliant blue and green European Kingfisher, that few who are acquainted with both fail to recognise their affinity. The brilliant plumage of the two birds; the patient watchfulness with which they both sit on some exposed twig to await the vagrant prey; their short flight from station to station; and their repeated return to the same spot; — independent

of that intimate resemblance in the structure of their extremities, which led Brisson, Latreille, and Cuvier, to arrange the Halcyons in company with the Todies, would induce one to conclude that there was some propinquity in their natures, without any great knowledge of Natural History. The difference of the element in which they severally seek their food, does not widen the affinity between them, for the Jacamars of America, and the Martin-chasseurs of Africa, or King-hunters, as they are called, to distinguish them, in their pursuit of a terrestrial or aërial prey, from the Kingfishers or Martin-pecheurs, which seek theirs only in the water,—are placed in no less near a relationship of habits and structure. The similarity is remarkably increased, when we go on to the habit of burrowing, which prevails alike among all these birds, and to the syndactyle form of the feet. These resemblances remove all doubt about their classification.

"The Spaniards of Hispaniola call the Green Tody by a very appropriate name, the Barrancali, from the barrancas or earthy ravine-cliffs in which it builds; *barranca* being the appellation for the deep breaks and gullies made by the mountain-floods."

A nest is in my possession, attributed to the Tody, which, if rightly appropriated, is a remarkable deviation from a general habit. A person of intelligence informed me, about the middle of May, that he knew of a "Red-breast" building in a tree; at which he was surprised, knowing its habit of burrowing to breed. I assured him that he must

be in error; but he was confident of the fact, however anomalous, as he had seen the bird actually in the nest. In a few days he sent me the twig with the nest upon it. It was certainly one to which I could assign no probable ownership, but that he had mentioned. It was built on a small shrubby tree, in the fork formed by one of the principal branches, and a twig that it sent forth, being rather wider than a right angle. As the main branch is not thicker than one's little finger, and the nest is stretched from the one to the other, the outline of the rim forms a long oval about 1½ inch by ¾; and ¾ inch deep. It is a thin, very frail structure, formed of spiders' webs stretched along, in which are profusely inlaid the shining, brown perules of some leaf-buds; with the addition of a little silk-cotton, this is the whole: it looks unfinished. To set against the improbability of this being the nest of a Tody, there are these two considerations:—First, the direct evidence of an intelligent and observant man, who, I feel sure, would not willingly deceive me, and to whom the Tody was too familiar for him to mistake its identity. Secondly, the nest is too small for any other known Jamaican bird, except the Humming-birds; and I have specimens of the nests of all our known species, not one of which it resembles at all. I have no doubt that the report is correct, and that it is an aberration of habit.

FAM.—ALCEDINIDÆ. (*The Kingfishers.*)

BELTED KINGFISHER.*

Ceryle Alcyon.

Alcedo alcyon,	LINN.—Aud. pl. 77.
Ceryle alcyon,	BOIE.

ON my arrival in Jamaica in December, I used frequently to see this well-known bird sitting on the bushes that overhang the romantic river of Bluefields, or shooting along on swift wing, over its rapid course. As the spring came on, however, and merged into summer, I ceased to see it, there or elsewhere, no doubt because it had migrated to the north; the very individuals that I had seen in Jamaica being, perhaps, now in Canada. About the beginning of September it again appeared, rather numerously for a solitary bird, scarcely a morning passing without our seeing one or more along the sea-side. Where the mangrove or the sea-grape stretches its branches down to the water's edge, stopping the way along the yellow beach, the Kingfisher delights to resort, sitting on a projecting twig; here he waits patiently for the approach of some small fish, on which he drops perpendicularly, and having seized it in his powerful beak,

* Length $13\frac{1}{8}$ inches, expanse $21\frac{1}{2}$, flexure $6\frac{1}{4}$, tail $3\frac{1}{8}$, rictus $2\frac{9}{10}$, tarsus $\frac{5}{10}$, middle toe $\frac{8}{10}$.

emerges from the wave, and returns to his former station to swallow it. It is a very shy and recluse bird; I have found scarcely any more difficult of approach: the posts of observation which he chooses are mostly such as command a wide view; and it is very wary; long before the gunner can creep within shot, the bird takes alarm, and darts away to a distant tree. Often as it sits watching, and sometimes at the moment of flying, it utters a loud rattling *churr*.

Though in general a solitary bird, it is not unusual to observe two playing together, chasing each other from tree to tree. A pair which I obtained soon after their autumnal appearance, were thus engaged. I watched them a long while, endeavouring to get a shot at them, but owing to their wariness, was long unsuccessful. They took a wide round, including, as alighting places, three high cotton-trees, one or two mangroves, and a sea-grape, returning to these in succession, though not with perfect regularity. As they flew they called to each other, with the usual harsh cry; now and then they paused to mark the shoals of small fishes that were swimming beneath, and plunged down upon them; and I noticed that at such times the bird went wholly under water. Once both birds seized the same fish, nearly at the same moment, and rising with it into the air, each tugged in contrary directions, until the grasp of one gave way. At last my assistant, Sam, taking advantage of a dense and matted withe near one of the alighting trees, concealed himself in it, whence he shot them both.

The first was only wounded, and falling into the water swam out sea-ward, *striking out* boldly, the wings, however, partially opened. On being seized he proved very fierce, erecting the long crest, and endeavouring to strike with his pointed beak. He got hold of my thumb, and squeezed so powerfully, that the cutting edge of the upper mandible sliced a piece of flesh clean out. He was tenacious of life, for though I pressed the trachea until motion ceased, he repeatedly revived.

The form of the body of this bird, in conjunction with the head and beak, is wedge-shaped, the tip of the latter being the point. This form is admirably suited for its sudden and impetuous plunges upon its fishy prey; as the powerful texture, great size, sharp point, and cutting edges of the beak, are for holding it. The feathers of the throat and breast are of the closest texture, and lie on each other like scales, preventing the access of any water to the body, while, from their glossy, satiny surface, the water is thrown off instantly on emersion, as from the plumage of a duck. The feet again, though small, are muscular, the tarsus very short, the toes united into a broad, flat palm, and the claws unusually strong, short, and sharp. When one remembers that the Kingfisher digs his own cave out of the clayey or gravelly cliffs to the depth of several feet, we shall see the use of his strong and broad feet, as we may see it also in the Mole. Beautiful proofs of our God's consummate wisdom in forming his creatures!

FAM.—NECTARINIADÆ.—(*The Honey-suckers.*)

BLACK AND YELLOW CREEPER.*

Banana Quit.

Certhiola flaveola.

Certhia flaveola,	LINN.—Edw. 122.
Nectarinia Antillensis.	LESS.
Certhiola flaveola,	SUNDEV.

SCARCELY larger than the average size of the Humming-birds, this little Creeper is often seen in company with them, probing the same flowers, and for the same purpose, but in a very different manner. Instead of hovering in front of each blossom, a task to which his short wings would be utterly incompetent, the Quit alights on the tree, and proceeds, in the most business-like manner, to peep into the flowers, hopping actively from twig

* Length $4\frac{1}{8}$ inches, expanse $6\frac{1}{2}$, flexure $2\frac{6}{10}$, tail $1\frac{2}{10}$, rictus $\frac{5}{10}$, tarsus $\frac{13}{20}$, middle toe $\frac{5}{10}$.

Male. Irides dark hazel; beak black, very acute; feet slate-grey: tongue bifid, penicillate. Upper parts black, except the rump, which is bright yellow, well-defined. Outer web of the primaries white at base, which then runs down along the edge; secondaries, tertials, and tail feathers very slightly tipped with white: on the outmost tail-feather the white tip is very much increased. Over the eye a broad arched stripe of white. Throat dull, dark grey. Under parts yellow, deepest on the breast, divided from the grey by a transverse line, very pale or white on under tail-coverts. Inner surface of wings white; edge of shoulder brilliant yellow.

Female, and young of year. Upper parts blackish olive; band over eye, rump, and whole under parts dull pale yellow; wing quills dull black, bases white; tail black, tips whitish. Colours ill-defined.

to twig, and throwing the body into all positions, often clinging by the feet with the back downwards, the better to reach the interior of a blossom, with his curved beak, and pencilled tongue. The minute insects which are always found in the interior of flowers, are the object of his search, and the reward of his perseverance. Unsuspectingly familiar, these birds often resort to the blossoming shrubs of gardens and yards. A large Moringa tree, that is all through the year profusely set with fragrant spikes of bloom, is a favourite resort both of these and the Humming-birds. One within a few feet of my window, is, while I write this note, being carefully scrutinised by two active little creatures, that pursue their examination with a zeal perfectly undisturbed by my looking on, while the same blossoms are rifled on one side by a minute Humming-bird, and on the other by that gorgeous butterfly *Urania Sloaneus:* an interesting association! The Quit often utters a soft, sibilant note, as it peeps about.

The nest of this bird is very frequently, perhaps usually, built in those low trees and bushes, from whose twigs depend the paper nests of the Brown Wasps, and in close contiguity with them. The Grass Quits are said to manifest the same predilection: it is a singular exercise of instinct, almost of reason; for the object is doubtless the defence afforded by the presence of the formidable insects; but upon what terms the league of amity is contracted between the neighbours, I am ignorant.

It is in the months of May, June, and July, that

this Creeper performs the business of incubation. On the 4th of May, as I was riding to Savanna le Mar, I observed a Banana Quit with a bit of silk-cotton in her beak; and on searching, found a nest just commenced in a sage-bush (*Lantana camara*). The structure, though but a skeleton, was evidently about to be a dome, and *so far*, was constructed of silk-cotton. Since then I have seen several completed nests. One now before me, is in the form of a globe, with a small opening below the side. The walls are very thick, composed of dry grass, intermixed irregularly with the down of *Asclepias*. It appeared to have been forsaken, from my having paid it too much attention. It was fixed between the twigs of a branch of a *Bauhinia*, that projected over the high road, near Content, in St. Elizabeths. Another which I found at the end of June, in a sage-bush, was of the same structure; in this were two eggs, greenish-white, thickly but indefinitely dashed with reddish, at the larger end. Robinson states the dimensions thus:—"the length about 3½ eighths, the diameter about 2½ eighths," but I find my specimens much larger than this: accurate measurement giving ⅝ inch by rather less than ½ inch.

An exceedingly interesting memoir, from the pen of Mr. Hill, on the prevalence of domed nests within the tropics, and the connexion of this fact with electricity, will be found in the Zoological Transactions for September 14th, 1841.

SPOTTED CREEPER.*

(*Cape May Warbler.*—WILS.)

Certhiola maritima.

Sylvia maritima, WILS.—Aud. pl. 414.
Sylvicola maritima, SW.

IT is with hesitation that I place this species in the genus Certhiola. The extreme slenderness of the beak, its curved form, and acute tip, the form of the wings, the length of the tarsi, and above all, *the pencil of hairs* which forms the termination of the tongue, have guided me in this decision. It appears to be so rare in the United States, that but a single specimen occurred to the indefatigable Wilson, and but one to the Prince of Canino. I found it rather less scarce in Jamaica, having obtained some four or five specimens in the course of the autumn and winter. The character of its plumage is certainly that of the Warblers, as is its seasonal change: of its manners I regret that I have no notes. When it arrives with us in October, the crown of the male, instead of being deep black, is ashy-grey, tinged here and there with yellow, and studded with black spots, the feathers having black disks with ashy borders. In February, by the growth of the feathers, and the wearing off of the edges, the black spots have become confluent, form-

* Length 4¾ inches, expanse 8$\frac{2}{10}$, flexure 2½, tail 1$\frac{8}{10}$, rictus $\frac{5}{10}$, tarsus $\frac{8}{10}$, middle toe $\frac{11}{20}$.

ing an unbroken black surface, which is its summer character. The fat of this species is of a deep fulvous hue, almost orange.

FAM.—TROCHILIDÆ. (*The Humming-birds.*)

MANGO HUMMING-BIRD.*

Lampornis Mango.

Trochilus mango, LINN.
Lampornis mango, SWAINS.

FOR what reason Linnæus applied the trivial name of Mango to this Humming-bird I have no knowledge; that it could have no connexion with the mango tree is evident, since that tree was not introduced into the western world till long after his time. It was perhaps a native name. It is not confined to Jamaica, but seems more widely spread than most of these tiny birds. Lesson says, "The Mango inhabits Jamaica, and, as it appears, not only the greater Antilles, but also Terra Firma, and even, it is said, Brazil and Guiana." Hence it has long been familiar to naturalists. It is the Largest or Blackest Humming-bird of Sloane. Lesson, in "Les Colibris," has given no less than four figures of this species in different ages, pl. xiii. to xv., but I cannot say much in their praise.

* Length 5 inches to $5\frac{1}{4}$, expanse $7\frac{1}{8}$, tail $1\frac{3}{4}$, rictus $1\frac{2}{10}$, flexure $2\frac{0}{10}$, tarsus $\frac{1}{4}$, middle toe $\frac{7}{20}$.

Irides, dark hazel; beak and feet black.

The *Polythmus Mexicanus* and *Polythmus Jamaicensis* of Brisson, both refer, without doubt, to the present bird. It is *le plastron noir* of Buffon. Whether *Trochilus gramineus* of St. Domingo, which has been supposed to represent this species in that sister island, is really any thing more than a variety, I have no means of determining. My valued friend Mr. Hill, in writing to me observes, "Buffon makes his '*plastron noir*' of Jamaica, common to Brazil and St. Domingo. The compensatory bird in St. Domingo is much more green than Jamaica specimens; i. e., with a less disposition to assume the violet and purple in the changes of light, and with decidedly a less prevalence of what Buffon designates the 'beau noir velouté.'"

I may add that both the birds alluded to have been familiar to my friend, from personal observation in both islands.

The appellation by which the Mango Humming-bird is familiarly known to the negroes in the colony, is that of "Doctor bird," which, however, is sometimes applied also to Polytmus. It is thus explained by Mr. Hill:—"In the old time, when costume was more observed than now,—the black livery among the gayer and more brilliant Trochilidæ represented the Doctor. It might with equal propriety have been the parson; but parsons were less known than doctors, in the old times of the colony."

Though occurring at all seasons, I have not found the Mango abundant at any; it is, indeed, far less common than either *Polytmus* or *Humilis*.

It affects the lowlands in preference to the mountains, and open places rather than the deep woods; yet it is rarely seen to suck the blossoms of herbs or shrubs, as Humilis does, but like Polytmus hovers around blossoming trees. The bunch of blossom at the summit of the pole-like papaw-tree (*Carica papaya*) is a favourite resort of this species, particularly at sunset. This habit I observed and took advantage of very soon after my arrival, for there was a fine male papaw tree in profuse bloom close to the door at Bluefields, which the Mango frequented. Wishing to keep these birds in captivity, I watched at the tree one evening with a gauze ring-net in my hand, with which I dashed at one, and though I missed my aim, the attempt so astonished it, that it appeared to have lost its presence of mind, so to speak, flitting hurriedly hither and thither for several seconds before it flew away. The next evening, however, I was more successful. I took my station, and remained quite still, the net being held up close to an inviting bunch of blossom: the Humming-birds came near in their course round the tree, sipped the surrounding blossoms, eyeing the net; hung in the air for a moment in front of the fatal cluster without touching it, and then, arrow-like, darted away. At length one, after surveying the net, passed again round the tree; on approaching it the second time, perceiving the strange object to be still unmoved, he took courage, and began to suck. I quite trembled with hope: in an instant the net was struck, and before I could see anything,

the rustling of his confined wings within the gauze told that the little beauty was a captive. I brought him in triumph to the house and caged him; but he was very restless, clinging to the sides and wires, and fluttering violently about. The next morning, having gone out on an excursion for a few hours, I found the poor bird on my return, dying, having beaten himself to death. I never again took this species alive.

The sustenance of the Humming-birds is, I feel assured, derived almost exclusively from insects. That they seek the nectar of flowers I readily admit, and that they will eagerly take dissolved sugar or diluted honey in captivity I also know; but that this would maintain life, or at least vigour, I have great reasons for doubting, which I shall mention in the history of the following species. I have dissected numbers of each of our species, and have invariably found the little stomach distended with a soft black substance, exactly like what we see in the stomachs of the Warblers, which being put into clear water, and examined with a lens, proves to be entirely composed of minute insects. The interior of flowers is almost always inhabited by very small insects, and it is I believe principally to pick out these that the Humming-birds probe the tubular nectaries of blossoms. Wilson has mentioned his having observed the Ruby-throat (*T. Colubris*) pursuing flies on the wing. I also have witnessed the same thing in our species, many times. I have seen the Mango, just before night fall, fluttering round the top of a tree on which were no blos-

soms, and from the manner in which it turned hither and thither, while hovering in a perpendicular position, it was manifest that it was catching minute insects. This species when flying often flirts and flutters the tail in a peculiar manner, throwing it in as he hangs perpendicularly in mid air, when the appearance of the broad lustrous feathers, expanded like a fan, is particularly beautiful.

The pugnacity of the Humming-birds has been often spoken of; two of the same species can rarely suck flowers from the same bush without a rencontre. Mango, however, will even drive away another species, which I have never observed the others to do. I once witnessed a combat between two of the present species, which was prosecuted with much pertinacity, and protracted to an unusual length. It was in the month of April, when I was spending a few days at Phœnix Park, near Savanna le Mar, the residence of my kind friend, Aaron Deleon, Esq. In the garden were two trees, of the kind called the Malay apple (*Eugenia Malaccensis*), one of which was but a yard or two from my window. The genial influence of the spring rains had covered them with a profusion of beautiful blossoms, each consisting of a multitude of crimson stamens, with very minute petals; like bunches of crimson tassels; but the leaf-buds were but just beginning to open. A Mango Humming-bird had, every day, and all day long, been paying his devoirs to these charming blossoms. On the morning to which I allude, another came, and the manœuvres of these two tiny creatures became highly

interesting. They chased each other through the labyrinth of twigs and flowers, till, an opportunity occurring, the one would dart with seeming fury upon the other, and then, with a loud rustling of their wings, they would twirl together, round and round, until they nearly came to the earth. It was some time before I could see, with any distinctness, what took place in these tussles; their twirlings were so rapid as to baffle all attempts at discrimination. At length an encounter took place pretty close to me, and I perceived that the beak of the one grasped the beak of the other, and thus fastened, both whirled round and round in their perpendicular descent, the point of contact being the centre of the gyrations, till, when another second would have brought them both on the ground, they separated, and the one chased the other for about a hundred yards, and then returned in triumph to the tree, where, perched on a lofty twig, he chirped monotonously and pertinaciously for some time; — I could not help thinking, in defiance. In a few minutes, however, the banished one returned, and began chirping no less provokingly, which soon brought on another chase, and another tussle. I am persuaded that these were hostile encounters, for one seemed evidently afraid of the other, fleeing when the other pursued, though his indomitable spirit would prompt the chirp of defiance; and, when resting after a battle, I noticed that this one held his beak open, as if panting. Sometimes they would suspend hostilities to suck a few blossoms, but mutual proximity was sure

to bring them on again, with the same result. In their tortuous and rapid evolutions, the light from their ruby necks would now and then flash in the sun with gem-like radiance; and as they now and then hovered motionless, the broadly expanded tail, — whose outer feathers are crimson-purple, but when intercepting the sun's rays transmit orange-coloured light,— added much to their beauty. A little Banana Quit, that was peeping among the blossoms in his own quiet way, seemed now and then to look with surprise on the combatants; but when the one had driven his rival to a longer distance than usual, the victor set upon the unoffending Quit, who soon yielded the point, and retired, humbly enough, to a neighbouring tree. The war, for it was a thorough campaign, a regular succession of battles, lasted fully an hour, and then I was called away from the post of observation. Both of the Humming-birds appeared to be adult males. I have alluded to the preference which different species appear to manifest, for different blossoms; I may add that I have observed *Mellisuga humilis* come and suck the flowers of a Cashew tree (*Anacardium*), without noticing those of the Malay apple close by, while Mango seems to despise the former for the latter.

The lustrous glow reflected from the sides of the neck of the adult male, may be unperceived on a careless examination. In such Humming-birds as I have examined, (perhaps in all,) the iridescence of those portions of the plumage that are changeable, is splendid in the ratio of the acuteness of

the angle formed by the incident ray and the reflected one. Thus the plumes of the neck of Mango appear to advantage in a room with a single light, only when the beholder stands with his back to the window, and has the bird before him and facing him. Then the perpendicular band down the throat and breast, which seems composed of the richest black velvet, is bounded on each side by a broad band of glowing crimson, mingled with violet. It must be borne in mind, that *some* of the brilliant hues of Humming-birds are permanent, not changeable colours.

I have never met with the nest of this species; but Sam informed me in June that he had observed one near Morgan's Bridge, in Westmoreland. It was on a dead tree, and was placed *upon* a twig, but being full fifteen feet from the ground he could not examine it. He, however, saw the Mango Humming-bird fly out of it, and presently return. A nest, presented to me by my friend Mr. Hill, ticketed as that of Mango, is now before me. It has evidently been constructed to stand upon a horizontal twig, which the bottom has embraced. It is cylindrical externally, the botton being nearly flat. Its height is 1½ inch; its external diameter a little more; its internal diameter about 1 inch; the hollow, which is a little overhung by the margin, is cup-shaped, about ⅞ inch deep. It is composed almost entirely of the down of the gigantic silk-cotton tree, (*Eriodendron anfractuosum*) intermixed at the bottom with a little true cotton. The sides are tightly banded round with

the threads of spiders' webs, very neatly put on, and the whole exterior is studded with a minute whitish lichen, so profusely as almost entirely to conceal the down, without at all injuring the symmetry of the form. It is a most compact and beautiful little structure.

The down of the cotton-tree is the material ordinarily chosen by all our Humming-birds for the construction of their nests. The tree attains a giant size and diameter, and throws out to a vast distance its horizontal limbs, each equalling in its dimensions an ordinary forest tree. It is one of the few in those tropical islands, which are deciduous: the fierce blasts called "norths," which prevail in January and February, pouring down from the mountains, quickly lay it bare. I have seen an enormous tree in full foliage, almost leafless in an hour; the leaves filling the air, like flakes of snow in a driving storm. While it is yet denuded, the pods appear at the ends of the branches, resembling green walnuts: these ripen before the leaves bud, and opening, give freedom to a mass of fine silky filamentous down, which is borne away upon the wind. The filaments are so fine, that at this season, April and May, they are imbibed with the air we breathe, being almost impalpable, and are considered to aggravate pulmonary affections. The tufts so scattered, the Humming-birds and others of the feathered tribes, diligently collect, and that not only on the ground. I have been amused to observe a Mango Humming-bird suspending himself in the air, over against a puff of

down, which was slowly borne along upon a gentle breeze, picking at it and drawing filaments from it, doubtless with a view to nest-building.

LONG-TAILED HUMMING-BIRD.*

Trochilus polytmus.

Trochilus polytmus,	LINN.
Ornismya cephalatra,	LESS.—Ois. M. xvii.

THIS is the gem of Jamaican Ornithology. Its slender form, velvet crest, emerald bosom, and lengthened tail-plumes, render it one of the most elegant even of this most brilliant family. Though peculiar, as far as I am aware, to Jamaica, it has long been known, though it would seem from received

* Male. Length $10\frac{1}{4}$ inches, expanse $6\frac{3}{8}$, tail, longest feather $7\frac{1}{2}$, outmost feather $1\frac{3}{4}$, flexure $2\frac{6}{10}$, rictus 1, tarsus $\frac{9}{10}$, middle toe $\frac{6}{20}$.

Irides black; beak coral-red, the tip black; feet purplish-brown, soles paler. Crown, hind head, and nape deep velvety black, very slightly glossed; back, rump, wing and tail-coverts, rich golden-green; wings purplish-black, the outer edge of the first primary whitish; second primary longest; tail deep black, with bluish gloss, the uropygials, and the outer edges of the others glossed with golden-green, varying in intensity. The tail is slightly forked, the feathers regularly graduating from the uropygials outwards, save that the outmost but one is exceedingly lengthened. Throat, breast, and belly gorgeous emerald-green, extending to the thighs; vent and under tail-coverts, purpled black. The plumage of the hind head long and loose, descending in two lateral tufts upon the nape, which are to some extent erectile.

Female, $4\frac{1}{8}$ inches, tail $1\frac{6}{10}$, flexure $2\frac{2}{10}$. Irides dark brown; beak dull reddish-brown, black at edges and tip; feet nearly black. Front and crown dusky brown, scaled, gradually becoming green on the hind head, whence the whole upper plumage is rich golden-green. Tail blue

figures and descriptions very imperfectly. Edwards long ago gave a figure of it, which is recognisable. Lesson's figure and description are alike bad. The attitude is that never assumed by a Humming-bird; the back of the neck is made green instead of black; the scaly emerald plumage is diminished to a mere gorget instead of extending over the whole breast and belly; the beak and feet are both made yellow, whereas the former should have been crimson, the latter purple-black. He makes "Les Polythmus" his tenth Race, which he thus defines: "Beak short, straight: the external tail-feathers terminated by two long blades or filaments (*brins*)." Here every character is incorrect. The beak, though not long, is certainly not short; it is not straight, but perceptibly curved, particularly in the female; the curvature, it is true, varies in individuals, but I possess several females whose beaks are more curved than that of Mango; it is not the external tail-feather that is lengthened, but the second from the outside; lastly, this feather is not terminated by a filament, or by any structure varying from the other part; it is simply produced in length.

Mr. Swainson writes as if he were unacquainted with this species, for in speaking of the tendency of the lengthened external feathers of the tail in certain families of birds to turn *outwards* towards

black, the exterior two feathers on each side broadly tipped with white: uropygials golden green; the feathers graduate uniformly. Wings as in the male. Under parts white, the feathers having round tips of metallic green on the sides of the neck, and being mingled with green ones on the sides of the body. The plumage on each side of the nape, erectile, as in the male, but somewhat shorter.

their tips, he observes, "there is one solitary instance where these long exterior feathers are turned *inwards* instead of outwards: this occurs in a Humming-bird figured by Edwards, as a native of Jamaica, *but we have never yet* seen it, nor is a specimen known to exist at this time in any museum." (Class. Birds, I. 105.) This is no other than Polytmus; the long tail-feathers of which do bend inwards so as to cross each other when the bird is resting. I may add here that these long feathers have the inner edge prettily waved, not by actual indentation, but by a puckering of the margin, like a frill.

The Long-tail is a permanent resident in Jamaica, and is not uncommonly seen at all seasons and in all situations. It loves to frequent the margins of woods and road-sides, where it sucks the blossoms of the trees, occasionally descending, however, to the low shrubs. There is one locality where it is abundant, the summit of that range of mountains just behind Bluefields, and known as the Bluefields ridge. Behind the peaks which are visible from the sea, at an elevation of about half a mile, there runs through the dense woods a narrow path, just passable for a horse, overrun with beautiful ferns of many graceful forms, and always damp and cool. No habitation occurs within several miles and no cultivation, save the isolated provision grounds of the negroes, which are teeming with enormous Arums: and these are hidden from view far up in the thick woods.

The refreshing coolness of this road, its unbroken

solitude, combined with the peculiarity and luxuriance of the vegetation, made it one of my favorite resorts. Not a tree, from the thickness of one's wrist up to the giant magnitude of the hoary figs and cotton trees, but is clothed with fantastic parasites: begonias with waxen flowers, and ferns with hirsute stems climb up the trunks; enormous bromelias spring from the greater forks, and fringe the horizontal limbs; various orchideæ with matted roots and grotesque blossoms droop from every bough, and long lianes, like the cordage of a ship, depend from the loftiest branches, or stretch from tree to tree. Elegant tree-ferns, and towering palms are numerous; here and there the wild plantain or heliconia waves its long flag-like leaves from amidst the humbler bushes, and in the most obscure corners over some decaying log, nods the noble spike of a magnificent limodorum. Nothing is flaunting or showy; all is solemn and subdued; but all is exquisitely beautiful. Now and then the ear is startled by the long-drawn measured notes, most richly sweet, of the Solitaire, itself mysteriously unseen, like the hymn of praise of an angel. It is so in keeping with the solitude, and with the scene, that we are unconsciously arrested to admire and listen. The smaller wood consists largely of the plant called Glass-eye berry, a Scrophularious shrub, the blossoms of which, though presenting little beauty in form or hue, are pre-eminently attractive to the Long-tailed Humming-bird. These bushes are at no part of the year out of blossom, the scarlet ber-

ries appearing at all seasons on the same stalk as the flowers. And here at any time one may with tolerable certainty calculate on finding these very lovely birds. But it is in March, April, and May, that they abound: I suppose I have sometimes seen not fewer than a hundred come successively to rifle the blossoms within the space of half as many yards in the course of a forenoon. They are, however, in no respect gregarious; though three or four may be at one moment hovering round the blossoms of the same bush, there is no association; each is governed by his individual preference, and each attends to his own affairs. It is worthy of remark that males compose by far the greater portion of the individuals observed at this elevation. I do not know why it should be so, but we see very few females there, whereas in the lowlands this sex outnumbers the other. In March, a large number are found to be clad in the livery of the adult male, but without long tail-feathers; others have the characteristic feathers lengthened, but in various degrees. These are, I have no doubt, males of the preceding season. It is also quite common to find one of the long feathers much shorter than the other; which I account for by concluding that the shorter is replacing one that had been accidentally lost. In their aerial encounters with each other, a tail-feather is sometimes displaced. One day several of these "young bloods" being together, a regular tumult ensued, somewhat similar to a *sparrow-fight*:—such twittering, and fluttering, and dart-

ings hither and thither! I could not exactly make out the matter, but suspected that it was mainly an attack, (surely a most ungallant one, if so) made by these upon two females of the same species, that were sucking at the same bush. These were certainly in the skirmish, but the evolutions were too rapid to be certain how the battle went.

The whirring made by the vibrating wings of the male Polytmus is a shriller sound than that produced by the female, and indicates its proximity before the eye has detected it. The male almost constantly utters a monotonous quick chirp, both while resting on a twig, and while sucking from flower to flower. They do not invariably probe flowers upon the wing; one may frequently observe them thus engaged, when alighted and sitting with closed wings, and often they partially sustain themselves by clinging with the feet to a leaf while sucking, the wings being expanded, and vibrating.

The Humming-birds in Jamaica do not confine themselves to any particular season for nidification. In almost every month of the year I have either found, or have had brought to me, the nests of Polytmus in occupation. Still as far as my experience goes, they are most numerous in June; while Mr. Hill considers January as the most normal period. It is not improbable that two broods are reared in a season. In the latter part of February, a friend showed me a nest of this species in a singular situation, but which I afterwards found to be quite in accordance with its usual habits. It was at Bognie, situated on

the Bluefields mountain, but at some distance from the scene above described. About a quarter of a mile within the woods, a blind path, choked up with bushes, descends suddenly beneath an overhanging rock of limestone, the face of which presents large projections, and hanging points, encrusted with a rough, tuberculous sort of stalactite. At one corner of the bottom there is a cavern, in which a tub is fixed to receive water of great purity, which perpetually drips from the roof, and which in the dry season is a most valuable resource. Beyond this, which is very obscure, the eye penetrates to a larger area, deeper still, which receives light from some other communication with the air. Round the projections and groins of the front, the roots of the trees above have entwined, and to a fibre of one of these hanging down, not thicker than whipcord, was suspended a Humming-bird's nest, containing two eggs. It seemed to be composed wholly of moss, was thick, and attached to the rootlet by its side. One of the eggs was broken. I did not disturb it, but after about three weeks, visited it again. It had been apparently handled by some curious child, for both eggs were broken, and the nest was evidently deserted.

But while I lingered in the romantic place, picking up some of the landshells which were scattered among the rocks, suddenly I heard the whirr of a Humming-bird, and, looking up, saw a female Polytmus hovering opposite the nest, with a mass of silk-cotton in her beak. Deterred by the sight of me, she presently retired to a twig, a few paces

distant, on which she sat. I immediately sunk down among the rocks as quietly as possible, and remained perfectly still. In a few seconds she came again, and after hovering a moment disappeared behind one of the projections, whence in a few seconds she emerged again and flew off. I then examined the place, and found to my delight, a new nest, in all respects like the old one, but unfinished, affixed to another twig not a yard from it. I again sat down among the stones in front, where I could see the nest, not concealing myself, but remaining motionless, waiting for the petite bird's reappearance. I had not to wait long: a loud *whirr*, and there she was, suspended in the air before her nest: she soon espied me, and came within a foot of my eyes, hovering just in front of my face. I remained still, however, when I heard the whirring of another just above me, perhaps the mate, but I durst not look towards him lest the turning of my head should frighten the female. In a minute or two the other was gone, and she alighted again on the twig, where she sat some little time preening her feathers, and apparently clearing her mouth from the cotton-fibres, for she now and then swiftly projected the tongue an inch and a half from the beak, continuing the same curve as that of the beak. When she arose, it was to perform a very interesting action; for she flew to the face of the rock, which was thickly clothed with soft dry moss, and hovering on the wing, as if before a flower, began to pluck the moss, until she had a large bunch of it in her

beak; then I saw her fly to the nest, and *having seated herself in it,* proceed to place the new material, pressing, and arranging, and interweaving the whole with her beak, while she fashioned the cup-like form of the interior, by the pressure of her white breast, moving round and round as she sat. My presence appeared to be no hindrance to her proceedings, though only a few feet distant; at length she left again, and I left the place also. On the 8th of April I visited the cave again, and found the nest perfected, and containing two eggs, which were not hatched on the 1st of May, on which day I sent Sam to endeavour to secure both dam and nest. He found her sitting, and had no difficulty in capturing her, which, with the nest and its contents, he carefully brought down to me. I transferred it, having broken one egg by accident, to a cage, and put in the bird; she was mopish, however, and quite neglected the nest, as she did also some flowers which I inserted; sitting moodily on a perch. The next morning she was dead.

On the 7th of May, a lad showed me another nest of the same species, containing two young newly hatched. It was stuck on a twig of a sea-side grape tree, (*Coccoloba*), about fifteen feet above the ground, almost above the sea, for the tree grew at the very edge of the shore, and the branches really did stretch over the sea. The bird was wary, and would not return to the nest while I staid there, or Sam, whom I stationed in the tree to catch her; but on our receding a few

minutes, we found her on the nest. Sam watched sometime vainly with the insect-net; but as I thought, if I could secure her in a cage with her nest, the claims of her young would probably awaken her attention more than the mere unhatched eggs had done the former one, we proceeded to the tree at night with a lantern. The noise and shaking of the tree, however, had again alarmed her, (at least so we concluded,) for she was not on the nest when reached. The next morning Sam had occasion to pass twice by the grape-tree, but at neither time was the bird on the nest. Still suspecting nothing, we went after breakfast, to set a noose of horse-hair on the nest, a common artifice of the negro boys, to capture small birds when sitting. On mounting to set it, however, Sam discovered that the nest was quite empty, no trace of the unfledged young being left. It is probable that the bird, annoyed at being watched, had removed them in her beak, a thing not without precedent. Sam assured me, that if a Bald-pate Pigeon be sitting on a nest containing young, and be alarmed by a person climbing the tree, so as to be driven from the nest, twice in succession, you may look for the young the next day, in vain.

In June I found a nest of the same species on a shrub or young tree in the Cotta-wood. It contained one egg; I looked at it, and went a little way farther. In a few minutes I returned; the bird was sitting, the head and tail oddly projecting from the nest, as usual. I hoped to approach without alarming it, but its eye was upon me, and

when I was within three or four yards, it flew. I looked into the nest, but *there was no egg:* on search, I found it on the ground beneath, much cracked, but not crushed. How could it have come there? The bush, to the main stem of which it was attached, was too strong for the rising of the bird to have jerked it out; beside which, such result was not likely to happen from an action taking place many times every day. It must, I think, have been taken out by the bird. I replaced the cracked egg, and a day or two afterwards, visited it again: the nest was again empty, and evidently deserted.

On the 12th of November, we took, in Bluefields morass, the nest of a Polytmus, containing two eggs, one of which had the chick considerably advanced, the other was freshly laid. The nest was placed on a hanging twig of a black-mangrove tree, the twig passing perpendicularly through the side, and out at the bottom. It is now before me. It is a very compact cup, 1¾ inch deep without, and 1 inch deep within; the sides about ¼ inch thick, the inner margin a little overarching, so as to narrow the opening: the total diameter at top, 1½ inch; 1 inch in the clear. It is mainly composed of silk-cotton very closely pressed, mixed with the still more glossy cotton of an *asclepias*, particularly around the edge; the seed remaining attached to some of the filaments. On the outside the whole structure is quite covered with spiders' web, crossed and recrossed in every direction, and made to adhere by some viscous substance, evi-

dently applied after the web was placed, probably saliva. Little bits of pale-green lichen, and fragments of thin laminated bark, are stuck here and there on the outside, by means of the webs having been passed over them. The eggs are long-oval, pure white, save that when fresh, the contents produce a reddish tinge, from the thinness of the shell. Their long diameter $\frac{7}{12}$ inch; short $\frac{4}{12}$. The above may be considered a standard sample of the form, dimensions, and materials of the nest of this species. Variations, however, often occur from local causes. Thus, in the one from Bognie cave, only moss is used, and the base is produced to a lengthened point; one of exceeding beauty now before me, is composed wholly of pure silk-cotton, bound profusely with the finest web, undistinguishable except on close examination; not a fragment of lichen mars the beautiful uniformity of its appearance. Others are studded all over with the lichens, and these, too, have a peculiar rustic prettiness. The situations chosen for nidification, as will have been perceived, are very various.

I have attempted to rear the young from the nest by hand, but without complete success. A young friend found a nest in June, on a twig of a wild coffee-tree, (*Tetramerium odoratissimum*,) which contained a young bird. He took it, and fed it with sugar and water for some days, but when it was full fledged, and almost ready to leave the nest, it died and was partially eaten by ants. It was, however, a male, and formed an important link in the evidence by which I at length dis-

covered the specific identity of the female. Latham, it is true, long ago describes it conjecturally as the female of Polytmus; but Lesson, in his "Ois. Mouches," has treated the supposition as groundless. I may observe that to satisfy myself I was in the habit of dissecting my specimens, and invariably found, with one exception, the green-breasted to be males, the white-breasted to be females.* But to return. On the 20th of May of the present year (1846), Sam brought me the nest of a Polytmus, which had been affixed to a twig of sweet-wood (*Laurus*). It contained one young, unfledged, the feathers just budding, I began to feed it with sugar dissolved in water, presented in a quill, which it readily sucked many times a-day. Occasionally I caught musquitoes, and other small insects, and putting them into the syrup, gave them to the bird; these it seemed to like, but particularly ants, which crowded into the sweet fluid and overspread its surface. The quill would thus take up a dozen at a time, which were sucked in by the little bird with much relish. It throve manifestly, and the feathers grew apace, so that on the 29th, after having been in my possession nine days, it was almost ready to leave the nest. But on that day it died. Another I reared under similar circumstances, and in a similar way, until it was actually fledged. When nearly full grown, it would rear itself up, touching the

* The exception is, that a specimen obtained on the 6th of May, in female livery, displayed on dissection two indubitable testes, in the ordinary situation.

nest only with its feet, on tiptoe, as it were, and vibrate its wings as if hovering in flight, for minutes together. At length it fairly took its flight out at the window. Both these were females.

The young male, when ready to leave the nest, has the throat and breast metallic-green as above, the belly-feathers blackish, with large tips of green; the tail black with green reflections, untipped. A male which I obtained in May, and which I take to be the young of the preceding winter, has the green on the head, mingled with black, the disks of the feathers being green with a black border. The emerald green of the breast is partial in its extent, reaching to the belly only in isolated feathers, separated by large spaces of brownish-drab; while on the throat and breast, the feathers have merely large round disks of the emerald-colour, with narrow edges of brown.

The tongue of this species, (and doubtless others have a similar conformation,) presents, when recent, the appearance of two tubes laid side by side, united for half their length, but separate for the remainder. Their substance is transparent in the same degree as a good quill, which they much resemble: each tube is formed by a lamina rolled up, yet not so as to bring the edges into actual contact, for there is a longitudinal fissure on the outer side, running up considerably higher than the junction of the tubes; into this fissure the point of a pin may be inserted and moved up and down the length. Near the tip the *outer* edge of each lamina ceases to be convoluted, but is spread

out, and split at the margin into irregular fimbriæ, which point backward, somewhat like the vane of a feather; these are not barbs, however, but simply soft and flexible points, such as might be produced by snipping diagonally the edge of a strip of paper. I conjecture that the nectar of flowers is pumped up the tubes, and that minute insects are caught, when in flowers, in these spoon-like tips, their minute limbs being perhaps entangled in the fimbriæ, when the tongue is retracted into the beak, and the insects swallowed by the ordinary process, as doubtless those are which are captured with the beak in flight. I do not thoroughly understand the mode by which liquids are taken up by a Humming-bird's tongue, though I have carefully watched the process. If syrup be presented to one in a quill, the tongue is protruded for about half an inch into the liquor, the beak resting in the pen, as it is held horizontal: there is a slight but rapid and constant projection and retraction of the tubes, and the liquor disappears very fast, perhaps by capillary attraction, perhaps by a sort of pumping, certainly not by licking.

All the Humming-birds have more or less the habit when in flight of pausing in the air, and throwing the body and tail into rapid and odd contortions; this seems to be most the case with Mango, but perhaps is more observable in Polytmus from the effect that such motions have on the beautiful long feathers of the tail. That the object of these quick turns is the capture of insects I am sure, having watched one thus engaged pretty close to

me; I drew up and observed it carefully, and distinctly saw the minute flies in the air, which it pursued and caught, and heard repeatedly the snapping of the beak. My presence scarcely disturbed it, if at all.

The neck in these birds is very long; but appears short, because it forms a sigmoid curve downward, which is concealed by the feathers of the breast: the trachea is therefore long, and its appearance is singular, because the dilatation from which the bronchi divide, is near the middle of the whole length, the bronchi being full half an inch in length; they run down side by side, however, and are in fact soldered together for about half of their length: though the tubes are still distinct, as appears by a transverse section. Our two other species I have proved to have the same conformation.

When I left England, I had laid myself out for the attempt to bring these radiant creatures alive to this country: and after a little acquaintance with the Jamaican species, Polytmus seemed, from its beauty, its abundance, its size, its docility, and its mountain habitat, to be the species at once most likely to succeed, and most worthy of the effort. My expectations were disappointed: yet as the efforts themselves made me more familiar with their habits, the reader, I trust, will pardon some prolixity of detail in the narration of these attempts. Very many were caught by myself and my lads: the narrow path on Bluefields peak already mentioned, was the locality to which

we resorted on these expeditions. A common gauze butterfly-net, on a ring of a foot in diameter and a staff of three or four feet, we found the most effective means of capture. The elaborate traps recommended by some authors, I fear would suit the natural history of the closet, better than that of the woods. We often found the curiosity of these little birds stronger than their fear; on holding up the net near one, he frequently would not fly away, but come and hover over the mouth, stretching out his neck to peep in, so that we could capture them with little difficulty. Often too, one when struck at unsuccessfully, would return immediately, and suspend itself in the air just above our heads, or peep into faces, with unconquerable familiarity. Yet it was difficult to bring these sweet birds, so easily captured, home; they were usually dead or dying when we arrived at the house, though not wounded or struck. And those which did arrive in apparent health, usually died the next day. At my first attempt in the spring of 1845, I transferred such as I succeeded in bringing alive, to cages immediately on their arrival at the house, and though they did not beat themselves, they soon sunk under the confinement. Suddenly they would fall to the floor of the cage, and lie motionless with closed eyes; if taken into the hand, they would perhaps seem to revive for a few moments; then throw back the pretty head, or toss it to and fro as if in great suffering, expand the wings, open the eyes, slightly puff up the feathers of the breast, and die: usually without any con-

vulsive struggle. This was the fate of my first attempts.

In the autumn, however, they began to be numerous again upon the mountain, and having, on the 13th of November, captured two young males sucking the pretty pink flowers of *Urena lobata*, I brought them home in a covered basket. The tail-feathers of the one were undeveloped, those of the other half their full length. I did not cage them but turned them out into the open room in which the daily work of preparing specimens was carried on, having first secured the doors and windows. They were lively, but not wild; playful towards each other, and tame with respect to myself, sitting unrestrained for several seconds at a time on my finger. I collected a few flowers and placed them in a vase on a high shelf, and to these they resorted immediately. But I soon found that they paid attention to none but *Asclepias curassavica*, and slightly to a large *Ipomea*. On this I again went out, and gathered a large bunch of *Asclepias*, and was pleased to observe that on the moment of my entering the room, one flew to the nosegay, and sucked while I held it in my hand. The other soon followed, and then both these lovely creatures were buzzing together within an inch of my face, probing the flowers so eagerly, as to allow their bodies to be touched without alarm. These flowers being placed in another glass, they visited each bouquet in turn, now and then flying after each other playfully through the room, or alighting on various objects.

Though occasionally they flew against the window, they did not flutter and beat themselves at it, but seemed well content with their parole. As they flew, I repeatedly heard them snap the beak, at which times, they doubtless caught minute flies. After some time, one of them suddenly sunk down in one corner, and on being taken up seemed dying: it had perhaps struck itself in flying. It lingered awhile, and died. The other continued his vivacity; perceiving that he had exhausted the flowers, I prepared a tube, made of the barrel of a goose-quill, which I inserted into the cork of a bottle to secure its steadiness and upright position, and filled with juice of sugar-cane. I then took a large *Ipomea*, and having cut off the bottom, I slipped the flower over the tube, so that the quill took the place of the nectary of the flower, The bird flew to it in a moment, clung to the bottle rim, and bringing his beak perpendicular, thrust it into the tube. It was at once evident that the repast was agreeable, for he continued pumping for several seconds, and on his flying off, I found the quill emptied. As he had torn off the flower in his eagerness for more, and even followed the fragments of the corolla, as they lay on the table, to search them, I refilled the quill and put a blossom of the Marvel of Peru into it, so that the flower expanded over the top. The little toper found it again, and after drinking freely, withdrew his beak, but the blossom was adhering to it as a sheath. This incumbrance he presently got rid of, and then, (which

was most interesting to me,) he returned immediately, and inserting his beak into the bare quill, finished the contents. It was amusing to see the odd position of his head and body as he clung to the bottle, with his beak inserted perpendicularly into the cork. Several times, in the course of the evening, he had recourse to his new fountain, which was as often replenished for him, and at length about sunset betook himself to a line stretched across the room, for repose. He slept, as they all do, with the head not behind the wing, but slightly drawn back on the shoulders, and in figure reminded me of Mr. Gould's beautiful plate of *Trogon resplendens*, in miniature. In the morning, I found him active before sunrise, already having visited his quill of syrup, which he emptied a second time. After some hours, he flew through a door which I had incautiously left open, and darting through the window of the next room, escaped, to my no small chagrin.

Three males, captured on Bluefields peak on the 22nd of April, were brought home alive. They at once became familiar on being turned into the room, and one, the boldest, found out immediately a glass of sugar-syrup, and sipped repeatedly at it. One of them disappeared in the course of the next day, doubtless by falling into some obscure corner behind the furniture. The others, however, appeared quite at home, and one soon became so familiar, even before I had had him a day, as to fly to my face, and perching on my lip or chin, thrust his beak into my mouth, and suck up the

moisture. He grew so bold, and so frequent in his visits, as at length to become almost annoying; and so pertinacious as to thrust his protruded tongue into all parts of my mouth, searching between the gum and cheek, beneath the tongue, &c. Occasionally, I gratified him by taking into my mouth a little of the syrup, and inviting him by a slight sound, which he learned to understand; and this appeared to please his palate. Bouquets of fresh flowers they did not appear much to regard; but one or two species of *Lantana* seemed more attractive than the rest. I expected that the honeyed and fragrant bunches of blossom of the *Moringa*, which on the tree is perpetually visited by them, would tempt my captives, but after a brief trial, they disregarded them. Perhaps it was because they could sate their appetite more freely and fully at the syrup glass, which they frequently visited, but only sipped. They always clung to the glass with their feet, and very often to the flowers also. Each selected his own places of perching; there were lines stretched across the room, for drying bird-skins; and from the first each took a place on one of the lines, distant from the other, where he then invariably roosted, and rested. Each selected also one or two other stations for temporary alighting, but each adhered to his own, without invading his neighbour's. So strong was this predilection, that on my driving one away from his spot, he would flutter round the room, but return and try to alight there again, and if still prevented, would hover round the place,

as if much distressed. This preference of a particular twig for alighting is observable in freedom, and will suggest an analogy with the Flycatchers. I have not observed it in our other species. It gave us a means of capturing many, in addition to the net; for by observing a spot of resort, and putting a little birdlime on that twig, we could be pretty sure of a bird in a few minutes. The boldest was rather pugnacious, occasionally attacking his gentler and more confiding companion, who always yielded and fled; when the assailant would perch and utter a succession of shrill chirps, "*screep, screep, screep.*" After a day or two, however, the persecuted one plucked up courage, and actually played the tyrant in his turn, interdicting his fellow from sipping at the sweetened cup. Twenty times in succession would the thirsty bird drop down upon the wing to the glass,—which stood at the edge of a table immediately beneath that part of the line, where both at length were wont to perch,—but no sooner was he poised in front and about to insert his tongue, than the other would dart down with inconceivable swiftness, and wheeling so as to come up beneath him, would drive him away from his repast. He might fly to any other part of the room unmolested, but an approach to the cup was the signal for an instant assault. The ill-natured fellow himself drank long and frequent draughts. I noticed that no sooner had this individual recovered his boldness than he recovered his voice also, and both would *screep* pertinaciously and shrilly, almost without intermission. When they

were accustomed to the room, their vivacity was extreme, manifested in their upright posture, and quick turns and glances when sitting, which caused their lovely breasts to flash out from darkness into sudden lustrous light like rich gems;—and no less by their dartings hither and thither, their most graceful wheelings and evolutions in the air; so rapid that the eye was frequently baffled in attempting to follow their motions. Suddenly we lose the radiant little meteor in one corner, and as quickly hear the vibration of his invisible wings in another behind us: or find him hovering in front of our face, without having seen, in the least, how he came there. It is worthy of observation that Polytmus in flying upward, keeps the feathers of the tail closed, but in descending they are expanded to the utmost, at which time the two long feathers, quivering with the rapidity of their motion, like a streamer in a gale, form about a right angle. I cannot tell why there should be this difference, but I believe it is invariable.

From that time to the end of May, I obtained about twenty-five more, nearly all males, and with one or two exceptions captured on the Bluefields ridge. Some were taken with the net, others with bird-lime; but though transferred to a basket or to a cage immediately on capture, not a few were found dead on arrival at home. This sudden death I could not at all account for: they did not beat themselves against the sides, though they frequently clung to them: from the wild look of several that were alive when arrived, sitting on the bottom of

the cage, looking upwards, I suspect terror, at their capture and novel position, had no small influence. Many of those which were found alive, were in a dying state, and of those which were turned out into the room, several more died in the first twenty-four hours; generally, because, not observing the lines which the domesticated ones used as perches, they would fly against the perpendicular walls, where, after fluttering awhile suspended, they would at length sink, exhausted, perpendicularly downwards, the wings still vibrating, and alight on the object that intercepted their downward course. If this was the floor, they would presently rise on the wing, only again to flutter against the wall as before; but often it would happen that they would sink behind some of the many boxes with which the shelves were lumbered; in which case the space being too narrow for the use of their wings, they soon died unobserved, and were found dead only upon searching. This was the fate of many; so that out of the twenty-five, only seven were domesticated. These, however, became quite at home; and I may here observe that there was much difference in the tempers of individuals; some being moody and sulky, others very timid, and others gentle and confiding from the first. I have noticed this in other birds also; Doves, for instance, which manifest individuality of character, perhaps as much as men, if we were competent to appreciate it. My ordinary plan of accustoming them to the room, and teaching them to feed, was very simple.

On opening the basket in which one or more newly-caught Humming-birds were brought home, they would fly out, and commonly soar to the ceiling, rarely seeking the window; there for awhile, or against the walls, as above mentioned, they would flutter, not beating themselves, but hanging on rapidly vibrating wings, lightly touching the plaster with the beak or breast, every second, and thus slightly rebounding. By keeping a strict watch on them while so occupied, we could observe when they became exhausted, and sunk rapidly down to alight; commonly, they would then suffer themselves to be raised, by passing the finger under the breast, to which they would apply their little feet. Having thus raised one on my finger, and taken a little sugar into my mouth, I inserted its beak between my lips. Sometimes it would at once begin to suck eagerly; but at other times it was needful to invite it thus many times, before it would notice the sugar: by persevering, however, they commonly learned. And when one had once fed from the mouth, it was always ready to suck afterwards, and frequently, as above narrated, voluntarily sought my lips. Having given one his first lesson, I gently presented him to the line, and drawing my finger from under him, he would commonly take to it, but if not, the proceeding had to be repeated: and even when perched, the repetition of the feeding and placing on the line was needful to induce the habit. If the bird's temper were kindly, it soon began to perch on the line of its own accord; when I ceased to feed it from my lips, presenting to it,

instead, the glass of syrup. After it had sucked thus a time or two, it found it as it stood at the edge of a table; and I considered it domesticated. Its time was now spent in incessant short flights about the room, alternating with momentary rests on the line; often darting to another on the wing, when the most rapid and beautiful evolutions would take place, in which the long tail-feathers whisked about in a singular manner. I believe these rencontres were all amicable, for they never appeared to come into actual contact, nor to suffer any inconvenience from them. After close observation to ascertain the fact, I was fully convinced that the object of their incessant sallies on the wing was the capture of minute insects; so minute that they were generally undistinguishable to the human eye. Yet the action of the bird shewed that something was pursued and taken, and though from the extreme rapidity of their motions, I could not often see the capture, yet several times I did detect the snap of the beak, and once or twice witnessed the taking of some little fly, just large enough to be discerned in the air. Moreover, the flights were sometimes very short; a leap out upon the wing to the distance of a foot or two, and then a return to the perch, just as the true Fly-catchers do; which indeed the Humming-birds are, to all intents and purposes, and most accomplished ones. I judge, that, on a low estimate, each captured on the wing at least three insects per minute, and that, with few intervals, incessantly, from dawn to dusk. Abroad I do not think quite so many would be taken in the air, the

more normal way being, I presume, the securing of the minute creatures that inhabit the tubes of flowers; yet we perpetually see them hawking even at liberty. My captives would occasionally fly to the walls, and pick from the spiders' webs, with which they were draped. When they rested, they sat in nearly an upright posture, the head usually thrown a little back, and the crimson beak pointing at a small angle above the horizon, the feet almost hidden, the belly being brought into contact with the perch, the tail somewhat thrown in under the body, and the long feathers crossing each other near their middle. Their ordinary mode of coming down to drink was curious. I have said that their little reservoir of syrup was placed at the edge of a table, about two feet beneath them. Instead of flying down soberly in a direct line, which would have been far too dull for the volatile genius of a Humming-bird, they invariably made a dozen or twenty distinct stages of it, each in a curve descending a little, and ascending nearly to the same plane, and hovering a second or two at every angle; and sometimes when they arrived opposite the cup more quickly than usual, as if they considered it reached too soon, they would make half a dozen more horizontal traverses before they would bring their tiny feet to the edge of the glass and insert their sucking tongue. They were very frequently sipping, though they did not take much at a time; five birds about emptied a wine-glass per diem. Their fæcal discharges were altogether fluid, and exactly resembled the syrup which they imbibed. They were

rather late in retiring to roost, frequently hawking and sporting till dusk; and when settled for the night, were restless, and easily disturbed. The entrance of a person with a candle, at any hour, was liable to set one or two upon the wing; and this was always a matter of regret with me, because of the terror which they seemed to feel, incapacitating them from again finding the perching line. On such occasions they would again flutter against the walls, and sink down, as when first captured, with the same danger of accident, if not closely watched, and picked up when exhausted. After having inhabited my specimen-room for some time, (those first caught almost four weeks,) I transferred them, five in number, all males, to a large cage with a wired front, and two transverse perches; I had much dreaded this change, and therefore did it in the evening, hoping that the intervening night would calm them. I had in some measure prepared them for the change by placing the cage (before the front was affixed) upon the table some days previously, and setting their syrup-cup first close to the cage, then a little within, then a little farther, until at length it stood at the remotest corner. And I was pleased to observe that the birds followed the cup every day, flying in and out of the cage to sip, though at first very shyly and suspiciously, many times flying in and suddenly darting out without tasting the fluid. After I had shut them in, they beat and fluttered a good deal; but by the next day I was gratified to find that all had taken their places quietly on the perches, and

sipped at the syrup, though rather less than usual. I had now high hopes of bringing them alive to England, thinking the most difficult task was over; especially as within a day or two after, I added to them two more males, one of which presently learned both to perch and to find the cup, and also a female. The latter interested me much, for on the next day after her introduction, I noticed that she had seated herself by a long-tailed male, on a perch occupied only by them two, and was evidently courting his caresses. She would hop sideways along the perch by a series of little quick jumps, till she reached him, when she would gently peck his face, and then recede, hopping and shivering her wings, and presently approach again to perform the same actions. Now and then she would fly over him, and make as if she were about to perch on his back, and practise other little endearments; to which, however, I am sorry to say, he seemed most ungallantly indifferent, being, in fact, the dullest of the whole group. I expected to have them nidificate in the cage, and therefore affixed a very inviting twig of lime-tree to the cage wall, and threw in plenty of cotton, and perhaps should have succeeded, but for the carelessness of my servant. For he having incautiously left open the cage door, the female flew out and effected her escape.

But all my hopes of success were soon to be quashed; for after they had been in cage but a week, they began to die, sometimes two in a day; and in another week, but a solitary individual was left, which soon followed the others. I vainly en-

deavoured to replace them, by sending to the mountain; for where the species was so numerous two months before, they were now (beginning of June) scarcely to be seen at all. The cause of the death of my caged captives, I conjecture to have been the want of insect food; that, notwithstanding their frequent sipping at the syrup, they were really starved to death. I was led to this conclusion, by having found, on dissecting those which died, that they were excessively meagre in flesh, and that the stomach, which ordinarily is as large as a pea, and distended with insects, was, in these, shrunken to a minute collapsed membrane, with difficulty distinguished. If I had an opportunity of trying the experiment again, with the advantage of this experience, I would proceed rather differently. I would have a very capacious cage, wired *on every side*, in the bottom of which a supply of decaying fruit, such as oranges or pines, should be constantly kept, but covered with wire that the birds might not defile their plumage. This, as I have proved, would attract immense numbers of minute flies, which, flitting to and fro in the cage, would probably afford sufficient sustenance to the birds in conjunction with the syrup. The birds, however, should be caged as short a time as possible before sailing, which might be early in May; and by a steamer, which calling at St. Thomas, Bermuda, and the Azores, large bunches of fresh flowers, and even herbage, might be obtained at short intervals on the voyage, with which, of course, a multitude of insects would be introduced. Thus, I still think,

these lovely birds might be introduced into our conservatories and stoves, where there would be no difficulty in preserving them. Mr. Yarrell has suggested to me, that possibly young ones fed from the nest upon syrup alone, might be able to live without insect food.

VERVAIN HUMMING-BIRD.*

Mellisuga humilis.—MIHI.

Ornismya minima, LESS. Ois. M. 79. (nec auct.)

THAT this is the species of which M. Lesson has figured the female in his Oiseaux Mouches, pl. 79, there can be no doubt. His figure is a very fair representation; though it is too slender, and the white mark behind the eye I cannot find: this, however, I do not wonder at, if, as is most probable,

* Male. Length $2\frac{7}{10}$ inches, expanse $3\frac{1}{2}$, flexure $1\frac{1}{2}$, rictus $\frac{5}{10}$, (nearly,) tail $\frac{8}{10}$, tarsus rather above $\frac{1}{10}$, middle toe $\frac{1}{10}$, claw $\frac{1}{10}$.

Irides, beak, and feet black. Whole upper parts metallic-green; wings purplish-black; tail deep-black; chin and throat, white speckled with black; breast white; sides metallic-green; belly whitish, each feather tipped with green; vent white; under tail-coverts white, tipped faintly with green.

Female. Rather less; of a yellower green above, which descends half-way down upon the tail. Whole under parts pure white, unspotted, untinged with green; tail-feathers, except the uropygials, tipped with white.

Intestine $1\frac{9}{10}$ inch: no cæca.

his figure was taken from a dried specimen. He says, "it is beyond contradiction the smallest of all those yet known, and without doubt is the 'very little Humming-bird' of voyagers. Its length is 2 inches and 4 lines." But that it is the *Trochilus minimus* of Linnæus, Buffon, Edwards, and Latham, who can imagine, that puts any faith in testimony? Edwards' figure, which is said to be "of its natural bigness," measures $1\frac{4}{10}$ inch; that in the Pl. Enl. 276. fig. 1, is about $1\frac{3}{10}$; and Latham, who says expressly, "*I have received* this from Jamaica," gives its total length $1\frac{1}{4}$ inch, and that of its beak $3\frac{1}{2}$ lines. It is true the description as to colouring, &c., bears a very close resemblance to mine, but no one accustomed to the precision of science could mistake $2\frac{1}{2}$ inches for $1\frac{1}{4}$!* Neither is it possible that these minute specimens can be the *young* of the present species; for nestling Humming-birds, even when not half-fledged, are very little less in size than the adult, and, when able to leave the nest, are scarcely to be distinguished as to dimensions. Moreover, having reared this species I can speak positively. But Mr. Bullock records having obtained in Jamaica a species whose body was but half an inch in length; this specimen is understood to have become the possession of the late George Loddiges, Esq., and I have been assured by an

* Yet Sloane describes his "Least Humming-bird," (Jam. 308) as "about $1\frac{1}{4}$ inch long, from the end of the bill to that of the tail," while of his figure the bill alone measures $\frac{3}{4}$ inch, and the whole bird $2\frac{5}{8}$. As the worthy Doctor, however, is said to have taken his admeasurements with his *thumb-nail*, this slight variation is the less surprising.

ornithological friend, who has seen it, that it is no larger than the species of the old naturalists. Under these considerations, Lesson's name being manifestly misapplied, I have ventured to give to the present species a new appellation, derived from its habit of buzzing over the low herbaceous plants of pastures, which our other species do not. The West Indian vervain (*Stachytarpheta*) is one of the most common weeds in neglected pastures, shooting up everywhere its slender columns, set round with blue flowers, to the height of a foot. About these our little Humming-bird is abundant during the summer months, probing the azure blossoms a few inches from the ground. It visits the spikes in succession, flitting from one to another, exactly in the manner of the honey-bee, and with the same business-like industry and application. In the winter, the abundance of other flowers and the paucity of vervain-blossoms, induce its attentions to the hedgerows and woods.

I have sometimes watched, with much delight, the evolutions of this little species at the moringa tree already spoken of. When only one is present, he pursues the round of the blossoms soberly enough, sucking as he goes, and now and anon sitting quietly on a twig. But if two are about the tree, one will fly off, and, suspending himself in the air a few yards distant, the other presently shoots off to him, and then, without touching each other, they mount upward with a strong rushing of wings, perhaps for five hundred feet. Then they separate, and each shoots diagonally towards the ground, like a ball from a rifle, and wheeling round, comes up to the

blossoms again, and sucks, and sucks, as if it had not moved away at all. Frequently one alone will mount in this manner, or dart on invisible wing diagonally upward, looking exactly like a humble-bee. Indeed, the figure of the smaller Humming-birds on the wing, their rapidity, their arrowy course, and their whole manner of flight, are entirely those of an insect; and one who has watched the flight of a large beetle or bee, will have a very good idea of the form of one of these tropic gems, painted against the sky. I have observed all our three species at one time engaged in sucking the blossoms of the moringa at Content; and have noticed that whereas Polytmus and Mango expand and depress the tail, when hovering before flowers, Humilis, on the contrary, for the most part, *erects* the tail; but not invariably.

The present is the only Humming-bird that I am acquainted with, that has a real song. Soon after sunrise in the spring months, it is fond of sitting on the topmost twig of some mango or orange tree, where it warbles, in a very weak but very sweet tone, a continuous melody, for ten minutes at a time: it has little variety. The others have only a pertinacious chirping.

The season of nidification seems to be as protracted in this, as in the former species; nor does the structure itself differ, except in being of about half the size. The small bushes of *Lantana*, so common by roadsides, and always covered with orange and yellow blossom, are favourite situations for the domestic economy of this minim bird. The smooth twigs of the bamboo also are not unfrequent-

ly chosen. It is not an uncommon thing in Jamaica, for a road up a mountain to be cut in zig-zag terraces to diminish the steepness; and, to prevent the lower side of such a road from crumbling away, stems of green bamboo are cut and laid in a shallow trench along the edge. Shoots spring from every joint, and presently a close row of living palisades are growing along the margin of the road, whose roots, as they spread, effectually bind together the mountain-side, and make the terrace perpetual; while, as they increase in height and thickness, they throw their gracefully-waving tufts over the way, like gigantic ostrich plumes, affording most refreshing shadow from the heat. Such a *bamboo-walk*, as it is called, winds up the steep side of Grand Vale mountain in St. Elizabeth's, and here the nests of the Vervain Humming-bird are frequently met with.

One day in June, being up this road, I found two nests attached to twigs of bamboo, and one just commenced. Two parallel twigs were connected together by spiders' webs, profusely but irregularly stretched across, and these held a layer of silk-cotton, which just filled up the space (about an inch square) between them. This was the base. The others were complete cups of silk-cotton exceedingly compact and neat, ornamented outside with bits of grey lichen, stuck about. Usually the nest is placed on a joint of a bamboo branch, and the diverging twigs are embraced by the base. The nest is about the size of half a walnut-shell, if divided not lengthwise, but transversely. To see the bird sitting in this tiny structure is amusing.

The head and tail are both excluded, the latter erect like a wren's: and the bright eyes glance in every direction. One of these contained two eggs, the other a single young nearly fledged, which, with the nest, I carried to Content to rear.

It is interesting to observe the cleanliness of animals; the dung of young birds would greatly inconvenience them in the nest, and probably cause disease; it is therefore wisely ordained that there should be some mode of getting rid of it. Swallows carry out the excrement of their young in their beaks; and this they are able to do, as at that early season it is enclosed in a tenacious jelly. I observed with admiration, and with adoration, of the tender mercy of God in directing such minutiæ as these, for the comfort of His creatures, that this little Humming-bird, while I was carrying it, elevating its body above the edge of the nest, in the bottom of which it ordinarily lay, ejected the alvine discharge in a forcible jet, to the distance of several feet.

This little nestling I attempted to rear, and had every prospect of succeeding, for it eagerly received the juice of sugar-cane, which I administered to it in a small quill, many times in the day, sometimes adding small insects, as in a former case. But on the third day I was necessitated to return to Bluefields, and rode fifteen miles with the bird in my hand, enclosed in an open box. I took every care of it; but whether from too long fasting, or from the shaking, or exposure to the sun, I know not, but it was dying when I arrived, and a few

minutes put an end to its sufferings and my expectations.

Several times I have enclosed a nest of eggs in a gauzed cage, with the dam, taken in the act of sitting; but in no case did she survive twenty-four hours' confinement, or take the slightest notice of her nest. When engaged in the attempt to domesticate a colony of Polytmus, an opportunity offered to add this minute species to my aviary. For at that time two large tamarind-trees very near the house were in full blossom, and round them the Vervain Humming-bird was swarming. I never saw so many of this tribe at once; they flocked together, as Sam truly observed, "like bees," and the air resounded with their humming, as if in the neighbourhood of a hive. We caught several with the net, but could make nothing of them; they were indomitably timid. When turned into the room, they shot away into the loftiest angle of the ceiling, and there hovered motionless, or sometimes slowly turning as if on a pivot, their wings all the time vibrating with such extraordinary velocity as to be visible only as a semicircular film on each side. The fact that the extent of the vibration reached 180°, (or so nearly that it seemed to me such,) shews the immense power of the small muscles by which the wings are put in motion. Neither of our other species approaches either the rapidity or extent of this oscillation; and hence with this bird alone does the sound produced by the vibration of the wings acquire the sharpness of an insect's hum. The noise produced by the hovering of Polytmus is a

whirring exactly like that of a wheel put into rapid revolution by machinery; that of Humilis is a hum, like that of a large bee.

The spirit of curiosity is manifested by this little bird as well as by the larger species. When struck at, it will return in a moment, and peep into the net, or hover just in front of one's face. The stories told of Humming-birds attacking men, and striking at the eyes with their needle-like bills, originated, I have no doubt, in the exaggeration of fear, misinterpreting this innocent curiosity.

FAM.—CERTHIADÆ.—(*The Creepers.*)

BLACK AND WHITE CREEPER.*

Mniotilta varia.

Motacilla varia,	LINN.
Sylvia varia,	LATH.
Certhia maculata,	WILS.
Mniotilta varia,	VIEILL.
Certhia varia,	Aud. pl. 90.

THIS pretty bird, whose lot has been to oscillate in the systems of naturalists from the Warblers to the Creepers and from the Creepers to the Warblers, appears to have as much ambiguity in its manners as in its structure. One day I noticed it, and

* Length 5 inches, expanse $8\frac{1}{2}$, flexure $2\frac{3}{10}$, tail 2, rictus $\frac{6}{10}$, tarsus $\frac{9}{10}$, middle toe $\frac{6}{10}$.

watched its proceedings, in one of the spreading Black-withes, that form large tangled masses of long slender branches over a clear space of mud in the morasses, the topmost stratum of which alone is furnished with leaves, but that dense enough, not only with its own foliage, but also with the drapery of convolvulus that is usually hung in profusion over it. The little bird was mounting from the bottom, hopping from twig to twig, searching and picking as it went up; when it reached the bushy top, it suddenly descended, apparently by dropping perpendicularly to the bottom, where it picked a little about the mud, then mounted gradually, and dropped as before. After proceeding thus two or three times, I secured it.

At other times it affects the trunks of trees, even large ones, like a true Creeper, hopping diagonally up the perpendicular bole, and when at a good height, dropping down upon the wing, to alight again near the root, and proceed upward in another line. Now and then it stops to pick small insects from the crevices of the bark: and this sort of food I have always found in its stomach.

It is rather common in Jamaica during the winter months: we first saw it on the 26th of September, and last on the 30th of April.

The following interesting note accompanies a very correct drawing of this species by Robinson (Birds: large Folio):—"Motacilla alba et nigra varia.—It was pursued by a Hawk, and took sanctuary in Chateau-morant House. Mr. Holladay, overseer at Chateau in Clarendon, made me a present

of the live bird, December 24th, 1760. It was very tame, and so hungry that it picked some feathers out of a dead bird, and ate them. It weighed somewhat less than two drachms."

FAM.—TURDIDÆ.—(*The Thrushes.*)

HOPPING DICK.*

Twopenny Chick.

Merula leucogenys.

Turdus leucogenys,	GMEL.
Merula saltator,	HILL.

THE birds on which the peasantry in any country have conferred homely abbreviations of human names, are, I think, only such as have something lively and entertaining in their manners. Examples of familiar birds will at once occur to an English reader, and the subject of the present note is by no means an exception to the rule. He is one of the liveliest of our Jamaican birds: in woody places his clear whistle perpetually strikes the ear of the passenger, as he sits among the close foliage,

* Length $9\frac{1}{2}$ inches, expanse $14\frac{1}{2}$, flexure 5, tail $3\frac{3}{4}$, rictus $1\frac{1}{4}$, tarsus $1\frac{1}{2}$, middle toe $1\frac{1}{10}$. Irides dull orange; beak bright orange, blackish at tip; feet deep fulvous. Whole upper parts greyish-black; crown and tail deep black; wing-quills brownish-black; the innermost two of the greater coverts have the edge of the outer web pure white. Under parts ashy-grey, silky; darkest on throat; chin *usually* white; medial line of belly white: under tail-coverts black, tipped with white. Sexes exactly alike.

or darts across the glade. Not unfrequently we are startled by a shrill scream in some lonely place, and out rushes the Hopping Dick, jumping with rapidity across the road, almost close to our horse's feet. He greatly reminds me of the English Blackbird, in his sable plumage, and bright yellow beak, but especially when hopping along the branches of some pimento tree, or upon the sward beneath, in those beautiful park-like estates called *pens*. The keen glancing of his eye, his quick turns and odd gesticulations, the elevation of his long tail almost erect, his nods and jerks, have in them an uncommon vivacity, which is not belied by his loud voice, as he repeats a high mellow note four or five times in rapid succession, just preparatory to, or during, his sudden flights from tree to tree. His notes are various: sometimes we hear him in the lone wood, uttering, *click, click, click*, without variation of tone or intermission, for many minutes together. His *song*, which I have heard only in spring, is rich and mellow, much like the English Blackbird's: he sits in some thick tree, or wood, particularly at earliest dawn, and pours forth his clear notes in a broken strain, and often in a subdued tone, as if singing only to please himself.

I happened to wound slightly two of these birds on the same day, which I placed in a cage. They were free and easy from the first, very clamorous, lively and even headlong in their sudden movements. I found that they would seize and devour with eagerness cockroaches, hard beetles, worms, and even small lizards. I gave them a bunch of

the ripe, but dry and insipid, berries of a species of *ficus*, which they readily picked off and ate. The fruit of this fig they are fond of in a state of freedom; and such is their impudence that they prevent the Baldpate Pigeons, though so much bigger, from partaking. The Baldpates would willingly eat the little figs also, but the Hopping Dicks scream and fly at them, and peck their backs, so as to keep them fluttering from branch to branch, reluctant to depart, yet unable to eat in comfort.

At the break of day, if we pass along a wooded mountain road, such as that lonely one at Basinspring, in Westmoreland, particularly when the parching winds called *norths* have set in, in December and January,—we see the Hopping Dicks bounding singly along the ground in every part; but during the day they resort in numbers to the diminished springs and ponds which yet remain, where, after quenching their thirst, they enjoy the luxury of a bathe.

In the high mountains behind Spanish Town, this bird is called the Twopenny chick; but in the parishes of Westmoreland and St. Elizabeth, I have heard him distinguished only by the homely appellation which I have adopted. He is not confined to any particular locality. Dr. Chamberlaine (*Jam. Alm.*) has "never seen him in the lowlands." But around Bluefields he is abundant, especially in the little belt of wood that girds the sandy sea-beach at Belmont, where one may meet with him at all times. In the pastures of Mount Edgecumbe he is no less common. In the highest districts, as

Bluefields Peaks, though I have sometimes seen him, he is chiefly represented by his congener, the Glass-eye: in the solitudes of Basin-spring, a lower elevation, both species are numerous.

In some "Contributions to Ornithology," by Dr. Richard Chamberlaine, published in the Companion to the Jamaica Almanack for 1842, this bird is described. The following observations are there quoted from a letter of Mr. Hill's to the Doctor:—"I paid a visit the other day to the Highgate mountains, a district in which our native Ouzel, the Hopping Dick, is exceedingly abundant. On asking one morning the name of the bird, whose clear, mellow-toned whistle I was then listening to, a negro told me it was the *Hopping Dick*, and that they 'always hear him when the long days begin.' The long days had not yet begun; but at early dawn, while the distant horizon was seen but faintly gleaming through the dull grey break of daylight, and many of these Merles were gliding from one thicket to another, and dashing across the road with that bounding run from which they derive their soubriquet of Hopping Dick, one bird anticipated the season of song, by repeatedly sounding two or three cadences of that full deep whistle with which he salutes the lengthening year.

"The forests skirting the mountain are his favourite haunt. If he frequents the open slopes and crests of the hills, he glides from tree to tree, just above the surface of the grass. If he rises above the lower branches of the pimento, or into some of the loftier shrubs, it is to visit the *Tillandsias*,

or parasitical wild-pines, to drink from within the heart-leaves at those reservoirs of collected dews, which are the only resource of the birds in these high mountains. His dark sooty plumage, his brilliant orange bill, and his habit, when surprised or disturbed, of escaping by running or flying low, and sounding all the while his alarm scream till he gets away into the thicket, completely identify him with the European Blackbird.

"It was in the month of July, in 1834, that I first heard the song of this Ouzel, which I would call *Merula Saltator*, as this name preserves his distinctive soubriquet of Hopping Dick, and refers to his characteristic length of legs, both at the tarsus and the thighs. The shock of an earthquake had wakened all the living tenants of the plantation at which I was staying, when the voice of this bird, as the alarm lulled into silence, was heard from a small coppice of cedar-trees, clear and mellow. Though it was less varied than the song of the European Blackbird, it was very much like its tones when it is heard over distant fields in a summer's morning. I had been apprised that I should hear it there, for it had sung in that grove daily at that season for three or four years; and though under the disadvantage of being an anticipated song, it was a very agreeable recognition of the melody of the European bird.

"The next time I heard his music was in the month of May, 1836, in the same mountains. The rains of the season had terminated, or only mid-day showers fell, the mornings and evenings being refresh-

ing and brilliant. It was now not a single one of these birds that I heard singing lonely in a sequestered cluster of trees, but a hundred of them far and near, blending their voices together, or vying with each other in rivalry of song. My frequent weekly journeys in these districts, from this period to the end of August, were always cheered by this simultaneous outburst of melody from the *Merula saltator*."

I found a nest of this bird one day in the middle of August; it was affixed to the highest perpendicular limb of a rather tall pimento in Mount Edgecumbe, and consisted of a rude cup formed of the slender roots of pimento, and placed on a platform of leaves and small twigs. It contained two young, almost fledged, which flew to the ground before they could be seized, — and one abortive egg. The young displayed the plumage of the adult, even to the white webs on the two coverts; but the eyes were dark greyish-brown, the beak blackish, and the feet, dull, horny yellow. The egg measures $1\frac{4}{10}$ inch: by $\frac{9}{10}$: it is white, thickly splashed with dark and pale reddish-brown. Sometimes, as I have been informed, a decaying stump is selected, or any other convenient hollow, into which the bird carries "plantain trash," or similar materials, and forms a rude nest, laying three or four eggs. And Mr. Hill gives me a statement of a locality which is intermediate between these; observing, "A friend of mine found the nest of a Hopping Dick. It was built amid the dry leaves that had lodged within the forks

of a low branch of a mango-tree. It was a structure of small sticks, loosely woven, in the centre of which the young birds nestled among dried foliage."

GLASS-EYE.*

Shine-eye.—Fish-eye.

Merula Jamaicensis.

Turdus Jamaicensis,	Gm.—Lath. Ind. Or. i. 328.
Merula leucophthalma,	Hill.

This is exclusively a mountain bird; inhabiting the very same localities, and subsisting on the same food as the Solitaire, presently to be described; the pulpy berries of a Scrophularious shrub, which the negroes thence call *Glass-eye berry*. I have never found any animal substance in the stomach of this species, numbers of which I have examined; one in December contained many of the little scarlet figs, from the tree on which I shot it: in February the green pimento-berries are devoured by them;

* Length $8\frac{1}{2}$ inches, expanse 14, flexure $4\frac{9}{10}$, tail $3\frac{1}{4}$, rictus $1\frac{1}{10}$, tarsus $1\frac{1}{2}$, middle toe $1\frac{1}{10}$. Irides bluish white, somewhat pellucid; feet dark horn, soles yellowish; beak black, basal half of lower mandible sometimes yellow. Whole head dark umber-brown, except on the chin, where it is speckled with white. Back blackish ash, tinged with brown on wing-primaries: tail blue-black. Breast and sides dusky ash, silky; separated from the brown of the head by a narrow transverse band of pure white: belly silky white; under tail-coverts black, with broad white tips. Sexes alike in plumage and size. Intestine 12 inches; two cæca $\frac{1}{4}$ inch long, slender.

and later in the spring, it appears, the shining fruit of the Sweetwood (*Laurus*) is attractive to them. On the 30th of March, my lad shot a male Glass-eye by the road-side at Cave, scarcely a stone's throw from the sea, and level with it; the stomach contained the berries of this *Laurus*, which is abundant just there. This is the only instance in which I ever heard of the species, except in a mountain locality.

The common names of this bird are bestowed in allusion to the tint of the iris of the eye: this, as Mr. Hill observes, "is not absolutely white, but so transparently suffused with a hue of olive, that the eye has the look of very common glass."

The figure, attitudes, and motions of the Glass-eye are those of its fellow, the Hopping Dick; it is, however, much more recluse, and jealous of being seen. The dashing manner of flight across the narrow wood-paths are the same in both birds, but the loud and startling tones of the lowland bird are wanting in this. The Glass-eye has but one note *that I have heard;* a single low "*quank,*" frequently repeated as he hops from bush to bush, or plunges into the thicket. Dr. Chamberlaine attributes to him "the same loud sonorous chirp as he stealthily scuds from one dark recess of the forest to another;" but I should think him mistaken, were it not that Robinson, who gives a very correct drawing of the species by the name of *Turdus capite ferrugineo,* and describes it as common in the Liguanea mountains, affirms that "it whistles like our English Blackbirds." (MSS.)

The Woodthrush of Wilson, (*Turdus mustelinus*, Gm.,) a delightful songster, is a regular annual visitor in the neighbourhood of Spanish Town, but I have not seen it.

MOCKING-BIRD.*

"*Nightingale.*"

Mimus polyglottus.

Turdus polyglottus,	LINN.—Aud. pl. 21.
Mimus polyglottus,	BOIE.
Orpheus polyglottus,	SW.

ONE of the very commonest of birds in Jamaica, bold and forward in his manners, inviting rather than avoiding notice, of striking though not showy colours, the Mocking-bird would be sure to attract the attention of a stranger, even were he destitute of those unrivalled powers of song that have commanded the praise of all auditors. The faculty of imitating the voices of other birds, which has given to this species its ordinary appellation, has been ably described by Wilson and others, as well as the variety of notes, apparently original, which it commands. The former has often caused me no small disappointment; hearing the voice of, as I supposed, some new bird, or some that I was in want of, I have found, after creeping cautiously

* Length 10 inches, expanse 13, flexure 4¼, tail 4¼, rictus 1, tarsus 1 $\frac{4}{10}$, middle toe 1. Intestine 8 inches, two minute, rudimentary cæca.

and perhaps with some difficulty to the spot, that it proceeded from the familiar personage before us. With respect to the latter, I have been assured by an observant friend, George Marcy, Esq., of the Kepp, that he, on one occasion, counted no less than eighteen different notes, proceeding from a Mocking-bird perched on a tree in his garden.

It is in the stillness of the night, when, like his European namesake, he delights

> "———— with wakeful melody to cheer
> The livelong hours,"

that the song of this bird is heard to advantage. Sometimes, when, desirous of watching the first flight of *Urania Sloaneus*, I have ascended the mountains before break of day, I have been charmed with the rich gushes and bursts of melody proceeding from this most sweet songster, as he stood on tiptoe on the topmost twig of some sour-sop or orange tree, in the rays of the bright moonlight. Now he is answered by another, and now another joins the chorus, from the trees around, till the woods and savannas are ringing with the delightful sounds of exquisite and innocent joy. Nor is the season of song confined, as in many birds, to that period when courtship and incubation call forth the affections and sympathies of the sexes towards each other. The Mocking-bird is vocal at all seasons; and it is probably owing to his permanency of song, as well as to his incomparable variety, that the savannas and lowland groves of Jamaica are almost always alive with melody, though our singing birds are so few.

"It is remarkable," observes Mr. Hill, "that in those serenades and midnight solos, which have obtained for the Mocking-bird the name of the Nightingale, and which he commences with a rapid stammering prelude, as if he had awaked, frightened out of sleep, he never sings his songs of mimicry; his music at this time is his own. It is full of variety, with a fine compass, but less mingled and more equable than by day, as if the minstrel felt that the sober-seeming of the night required a solemnity of music peculiarly its own. The night-song of the Mocking-bird, though in many of its modulations it reminds us of that of the Nightingale of Europe, has less of volume in it. There is not more variety, but a less frequent repetition of those certain notes of extacy, which give such a peculiar character, and such wild, intense, and all absorbing feeling to the midnight song of the European bird. Though the more regulated quality of the song of *our* Nightingale is less calculated to create surprise, it is the more fitted to soothe and console; and that sensation of melancholy which is said to pervade the melody of the European minstrel, is substituted in the midnight singing of our bird by one of thoughtful and tranquil delight."

The nest of the Mocking-bird is not so elaborate a structure as that of many birds. It is built with little attempt at concealment in some bush or low tree, often an orange near the dwelling-house. One now before me, was built in a bunch of plantains. It consists of a rude platform of loose twigs, in which are interlaced many shreds of old rags;

this frame supports and encloses a rather neat cup, composed entirely of fine fibrous roots. Another has the frame almost wholly of rags, from canvas to lace; and the cup of thatch-threads, and horse-hair. Three eggs are commonly laid, measuring $\frac{19}{20}$ by $\frac{7}{10}$ inch, of a pale bluish-green, dashed with irregular blotches of pale reddish-brown: they are not perfectly regular in form, their oval having more or less tendency to a cylindrical shape, rather abruptly flattened at the ends. When young are in possession, their presence is no secret; for an unpleasant sound, half hissing, half whistling, is all day long issuing from their unfledged throats; delightful efforts, I dare say, to the fond parents. At this time the old birds are watchful and courageous. If an intruding boy or naturalist approaches their family, they hop from twig to twig, looking on with outstretched neck, in mute but evident solicitude; but any winged visitant, though ever so unconscious of evil intent, and though ever so large, is driven away with fearless pertinacity. The saucy Ani and Tinkling instantly yield the sacred neighbourhood, the brave Mocking-bird pursuing a group of three or four, even to several hundred yards' distance; and even the John-crow, if he sail near the tree, is instantly attacked and driven from the scene. But the hogs are the creatures that give him the most annoyance. They are ordinarily fed upon the inferior oranges, the fruit being shaken down to them in the evenings; hence they acquire the habit of resorting to the orange-trees, to wait for a lucky windfall. The Mocking-bird feel-

ing nettled at the intrusion, flies down and begins to peck the hog with all his might:—Piggy, not understanding the matter, but pleased with the titillation, gently lies down and turns up his broad side to enjoy it; the poor bird gets into an agony of distress, pecks and pecks again; but only increases the enjoyment of the luxurious intruder, and is at last compelled to give up the effort in despair.

In St. Domingo the Mocking-bird is no less common than in Jamaica: it is there called by the French inhabitants Rosignol, which is but a modification of Rosignor, or lord of the rose, the Spanish name of the Nightingale, probably of Moorish origin.

BLACK-CHEEKED YELLOW-THROAT.*

Maryland Yellow-throat. WILS.

Trichas Marylandica.

Turdus trichas,	LINN.
Sylvia trichas,	LATH.—Aud. pl. 23.
Trichas Marylandica.	SW.

WE have now arrived at an extensive group of birds of small size, and delicate form, mostly known by the name of *Warblers.* All of them are merely

* Length 5 inches, expanse 7, flexure $2\frac{4}{10}$, tail $1\frac{9}{10}$, rictus $\frac{6}{10}$, tarsus $\frac{9}{10}$, middle toe $\frac{13}{20}$.

winter visitants in Jamaica, the greater number retiring to the Northern continent to breed and spend the summer. To Wilson's and Audubon's descriptions, I refer the reader, as I have scarcely anything to add to their accounts of these birds.

The Yellow-throat, one of the most beautiful of them, was first seen by me on the 8th of October, on which day I obtained two males, in distinct localities. I do not think the species had arrived long, though some of the *Sylvicolæ* had been with us nearly two months, for I and my servants were in the woods every day seeking for birds, and this species is too striking to be easily overlooked. In the latter autumn months it was quite common, particularly in marshy places: I have seen it in some numbers hopping busily about the bulrushes in a pond, even descending down the stems to the very surface of the water, and picking minute flies from thence. The stomachs of such as I have examined, contained fragments of beetles and other insects.

In the spring, it seems to linger longer than its fellows; for the last warbler that I saw was of this species, on the 1st of May. Yet Wilson mentions that it habitually appears in Pennsylvania about the middle, or last week, of April; and that it begins to build its nest about the middle of May. The migration of the short-winged birds is probably performed in straggling parties, and extends over a considerable period of time; individuals remaining some time after the greater number have departed.

WORM-EATER.*

Vermivora Pennsylvanica.

Sylvia vermivora,	LATH.
Dacnis vermivora,	AUD. pl. 34.
Vermivora Pennsylvanica,	SW.

THIS is a scarce bird with us. Some three or four specimens are all that have occurred to my observation. It seems, however, to spread rather widely over the diversities of mountain and lowland; for, while the first was obtained on the top of the Bluefields Peak, the next was found close to the sea-shore. Its habits are constant: for we have always observed it perched transversely on the dry trunks of slender dead trees, engaged in peeping into, and picking from, the crevices of the bark. In the stomachs of those which I have examined, I have found comminuted insects. Spiders and caterpillars form the chief portion of its food, according to Wilson.

It is too rare to warrant an opinion as to the period of its arrival or departure: I first met with it on the 7th of October.

* Length 5 inches, expanse $8\frac{1}{2}$, flexure $2\frac{1}{2}$, tail $1\frac{9}{10}$, rictus $\frac{6}{10}$, tarsus $\frac{8}{10}$, middle toe $\frac{18}{20}$.

WATER THRUSH.*

Bessy Kick-up.—River-pink. (Rob. MSS.)

Seiurus Noveboracensis.

Motacilla Noveboracensis,	GM.—Aud. pl. 426.
Turdus aquaticus,	WILS.
Seiurus Noveboracensis,	SW.

I FIRST saw this amusing species about the end of August, around the muddy margins of ponds in St. Elizabeth and Westmoreland; and immediately afterward they became so abundant, that individuals were to be seen running here and there on the road, all the way from Bluefields to Savanna-le-Mar, especially along the sea-shore, and by the edges of morasses; not at all associating, however. They run rapidly; often wade up to the heel in the water, or run along the twigs of a fallen tree at the brink, now and then flying up into the pimento and orange trees. When walking or standing, the tail is continually flirted up in the manner of the Wagtails, whence the local name of *Kick-up*, though, perhaps, none but a negro would consider a motion of the tail, *kicking*. The resemblance of this bird to the Wagtail, Wilson has noticed, and it is very striking in many respects. It walks among the low grass of pastures, picking here and there, wagging the tail, and uttering a

* Length $5\frac{1}{2}$ inches, expanse $9\frac{4}{10}$, flexure 3, tail 2, rictus $\frac{7}{10}$, tarsus $\frac{9}{10}$, middle toe $\frac{13}{20}$.

sharp *chip*. Now and then it runs briskly, and snatches something, probably a winged insect, from the grass. Wilson praises its song very highly; in its winter residence with us it merely *chips* monotonously. The stomachs of several that I have dissected contained water-insects in fragments, and one or two small pond shells.

There is a remarkable analogy in the Water Thrushes to the Snipes and Plovers, in their habits of running by the side of water, of wading, and of flirting up the hinder parts; in the height of the tarsi; and in the elongation of the tertials. The Pea-Dove, which frequents water more than any other of our Doves, has longer tertials than any. Is there any connexion between the lengthening of these feathers, and aquatic habits?

GOLD-CROWNED THRUSH.*

Land Kick-up.

Seiurus aurocapillus.

Turdus aurocapillus,	LINN.—Aud. pl. 143.
Sylvia aurocapilla,	BONAP.
Seiurus aurocapillus,	SW.

THE speckled breast, rich fulvous crown, and warm olive back, make this a very pretty bird.

* Length $6\frac{1}{4}$ inches, expanse $9\frac{1}{2}$, flexure 3, tail $2\frac{1}{10}$, rictus $\frac{7}{10}$, tarsus 1, middle toe $\frac{3}{4}$.

His manners are much like those of his cousin Bessy, running along with much wagging of the tail, and chirping *tsip, tsip,* incessantly. He is, however, less aquatic in his predilections. I first observed the species about the middle of September; it was on a low part of the road by the side of a morass. Its attitude struck me, as it was running on the ground with the tail held almost perpendicularly upwards. In the stomach, a muscular gizzard, I have occasionally found *various seeds,* gravel, mud-insects, caterpillars, and small turbinate shells. I was one day amused by watching two, unassociated, walking about a place covered with dry leaves, beneath some trees. I was unseen by them, though quite close. The tail of each was carried quite perpendicular as they walked, which gave a most grotesque effect; but, as if this elevation were not sufficient, at almost every step they jerked it up still higher, the white under-coverts projecting in a puffy globose form.

Though this species arrives in Jamaica rather later than the preceding, they depart together, about the 20th of April: and soon after this their appearance in the United States is recorded. Unlike the preceding, the present species is said to be, even in summer, destitute of song.

BLUE YELLOW-BACK WARBLER.*

Parula Americana.

Parus Americanus,	LINN.
Sylvia Americana,	LATH.—Aud. pl. 15.
Sylvia pusilla,	WILS.
Parula Americana,	BONAP.

THIS pretty little species, so much in habits and appearance like the European Tits, arrives in Jamaica early in September, and retires late in April, for we last saw it on the 20th. During the autumn and winter it was among the most common of our warblers. In the morasses, especially, they were to be seen in numbers, yet not in company, making the sombre mangrove-woods lively, if not vocal. They are active and restless, hopping perpendicularly up the slender boles, and about the twigs, peeping into the bases of the leaves, and crevices of the bark, for insects.

The female, identified by dissection, has all the colours paler, but agrees with the male in their variety and distribution. Individuals, however, were found in September, which had the blue plumage of the head and of the rump, tipped with yellow, imparting a green tinge to those parts.

* Length $4\frac{1}{2}$ inches, expanse 7, flexure $2\frac{1}{4}$, tail $1\frac{6}{10}$, rictus $\frac{5}{10}$, tarsus $\frac{3}{4}$, middle toe $\frac{4}{10}$.

YELLOW-RUMP WARBLER.*

Sylvicola coronata.

Motacilla coronata,	LINN.—Aud. pl. 153.
Sylvicola coronata,	SW.

I HAVE little to say of this changeable species. It occurs but sparsely with us, coming rather late in the autumn, when the plumage is undergoing its transformation, so well detailed by Wilson. On only one occasion have I observed them numerous; towards the latter part of March, on the estate called Dawkins' Saltpond, near Spanish town, many were hopping about the Cashaw trees (*Prosopis juliflora*) that abound there. All of these that I examined, had the yellow of the crown obscured, and some almost obliterated. One which I shot in October did not display it at all, while one in January had the hue very brilliant, but only at the bases of the coronal feathers; exposed or concealed as in some of the Tyrants. As far as I have observed, the manners of this bird are those of a Fly-catcher, capturing minute insects on the wing, and returning to a twig to eat them. The stomach is usually filled with a black mass of minute flies.

* Length $5\frac{3}{4}$ inches, expanse $9\frac{3}{10}$, flexure $2\frac{9}{10}$, tail $2\frac{1}{4}$, rictus $\frac{6}{10}$, (nearly), tarsus $\frac{17}{20}$, middle toe $\frac{11}{20}$.

YELLOW-THROAT WARBLER.*

Sylvicola pensilis.

Sylvia pensilis,	LATH.—Aud. pl. 85.
Sylvia flavicollis,	WILS.
Sylvicola pensilis,	BONAP.

WILSON has justly observed that the habits of this lovely bird are those of a Tit or a Creeper. I have usually observed it creeping about the twigs of trees, or among the blossoms. The first I met with was thus engaged, creeping in and out, and clinging to the beautiful and fragrant flowers that grew in profuse spikes from the summit of a papaw-tree. It is one of the earliest of our visitors from the north, for this was on the 16th of August; and it remains until April among the sunny glades of our magnificent island. The stomach of such as I have examined was large, and contained caterpillars of various sizes and species. An individual in March, which I proved by dissection to be a female, did not differ in intensity of colouring, or any other appreciable respect, from the male. The eggs in the ovary at that season, were distinguishable, but minute.

* Length $5\frac{1}{4}$ inches, expanse 8, flexure $2\frac{1}{2}$, tail $1\frac{9}{10}$, rictus $\frac{13}{20}$ (nearly), tarsus $\frac{3}{4}$, middle toe $\frac{11}{20}$.

YELLOW RED-POLL WARBLER.*

Sylvicola æstiva.

Sylvia æstiva et petechia,	LATH.—Aud. pl. 95.
Sylvia citrinella et petechia,	WILS.
Sylvia Childrenii (young,)	Aud. pl. 35.
Sylvicola æstiva,	SW.

OF this very beautiful species, which has been described under so many names, I have specimens in much diversity of plumage, from that in which the chestnut crown, and spots of the breast are deep and conspicuous, to that in which there is no trace either of the one or the other. There is little in their manners to distinguish them from others of this pretty family. They arrive in Jamaica in September, and depart in April; and, like their fellows, hop about low trees, feeding on small insects. In March, I observed it rather numerous, hopping about the *Cleome pentaphylla,* and other low shrubs which were then in flower, on the banks of the new cut of the Rio Cobre, not half a mile from the sea of Kingston Harbour. Whenever I have seen it, it has been very near the sea.

* Length $5\frac{1}{4}$ inches, expanse $8\frac{1}{10}$, flexure $2\frac{6}{10}$, tail $2\frac{1}{10}$, rictus $\frac{6}{10}$, tarsus $\frac{9}{10}$, middle toe $\frac{1}{2}$.

AURORA WARBLER.*

Sylvicola eoa.—MIHI.

THE pair of singularly marked Warblers which I describe below, were shot on the 21st and 24th of January at Crabpond. That the male in summer plumage would be much more brilliant than my specimen, I have no doubt, for the latter is inferior to the female, and the patched character of the plumage indicates that a seasonal change was then proceeding. If it has been described in its nuptial livery I have failed to recognise it. The male, which was the first obtained, was hopping about the mangroves, which are abundant at the marshy place named, from the summits down to the very surface of the water; and the female was one of a pair that were toying, and chasing each other through the

* Length 5 inches, expanse $7\frac{6}{10}$, flexure $2\frac{7}{20}$, tail $1\frac{9}{10}$, rictus $\frac{6}{10}$, (nearly), tarsus $\frac{9}{10}$, middle toe $\frac{1}{2}$. Irides dark hazel; feet horn-colour; beak pale horn, culmen and tip darker. Male. Upper parts olive, approaching to yellow on the rump: sides of head marked with a band of orange, extending from the ear to the beak, and meeting both on the forehead and on the chin. Wing quills and coverts blackish with yellowish edges. Tail blackish olive, with yellow edges; the outermost two feathers on each side, have the greatest portion of the inner webs pale yellow. Under parts pale yellow. The crown, rump, tertials, belly, and under tail-coverts, are sparsely marked with undefined patches of pale orange. Female. Nearly as the male, but the deep orange is spread over the whole cheeks, chin, throat, and breast. The head and back are dusky grey, tinged with olive, and patched with the fulvous, much more largely, but irregularly, and as if *laid upon* the darker hue.

branches of the same trees. At this time, the ovary was scarcely developed, the ova being distinguishable only with a lens. The stomach, in each case, was filled with a black mass of insects.

RED-BACKED WARBLER.*

Prairie Warbler.—WILS.

Sylvicola discolor.

Sylvia discolor, VIEILL.—Aud. pl. 14.
Sylvia minuta, WILS.

IT is before the fierce heat of summer has begun to abate in the prairies of the west, that this little bird seeks its winter quarters. On the 18th of August I first met with it, on which day I shot two in different localities. One was hopping hurriedly about low bushes, and herbaceous weeds, not a foot from the ground, examining every stalk and twig, as it proceeded regularly but rapidly along the road-side, for insects. The other was differently engaged. It flew from a bush by the way-side as far as the middle of the road, when hovering in the air a few feet from the ground, it fluttered and turned hither and thither, and then flew back to nearly the same spot as that whence it had started. In a second or two it performed exactly the same manœuvres again; and then a third time,

* Length $4\frac{3}{4}$ inches, expanse 7, flexure $2\frac{8}{10}$, tail $1\frac{9}{10}$, rictus $\frac{11}{20}$, tarsus $\frac{3}{4}$, middle toe $\frac{6}{10}$.

preventing, by the irregularity of its contortions, my taking aim at it, for some time. I have no doubt it was capturing some of the minute dipterous flies which were floating in the declining sun, in numerous swarms; but in a manner not usual with the Warblers. The stomach, in each specimen, was full of small fragments of insects. From that period to April, on the 11th of which month I last saw it, it was a very common resident in the bushes and low woods.

Wilson describes the markings of the female as less vivid than those of the male; but two of that sex, which I shot in January, were in no respect inferior to the brightest males. Some have the red spots of the back almost, or even quite, obliterated; but this is not a sexual distinction.

BLACK-THROATED BLUE WARBLER.*

Sylvicola Canadensis.

Motacilla Canadensis,	LINN.
Sylvia Canadensis,	LATH.—Aud. pl. 155.
Sylvia sphagnosa (young),	BONAP.

IN its winter residence with us, the Black-throat prefers the edges of tall woods, in unfrequented mountainous localities. I have scarcely met with it in the lowlands. The summits of Bluefields Peaks,

* Length $5\frac{1}{2}$ inches, expanse 8, flexure $2\frac{6}{10}$, tail $2\frac{1}{8}$, rictus $\frac{11}{20}$, tarsus $\frac{8}{10}$, middle toe $\frac{6}{10}$.

Bognie and Rotherwood, are where I have been familiar with it. It was there that Sam shot the first specimen that I obtained, on the 7th of October, and at the same lofty elevation, I afterwards saw it repeatedly. Three or four of these lovely birds frequently play together with much spirit, for half an hour at a time, chasing each other swiftly round and round, occasionally dodging through the bushes, and uttering, at intervals, a pebbly *chip*. They often alight, but are no sooner on the twig than off, so that it is difficult to shoot them. I have observed one peck a glass-eye berry, and in the stomachs of more than one, I have observed many hard shining black seeds. But more frequently it leaps up at flies and returns to a twig. At other times I have noticed it flitting and turning about in the woods, apparently pursuing insects, and suddenly drop perpendicularly fifteen or twenty feet, to the ground, and there hop about. Restlessness is its character: often it alights transversely on the long pendent vines and withes, or on slender dry trees, hopping up and down them without a moment's intermission, pecking at insects. It is generally excessively fat, and what is rather unusual, the fat is as white as that of mutton.

In the middle of March I met with it in the neighbourhood of Spanish town, and, on the 9th of April, Sam found it at Crabpond, for the last time, soon after which it, no doubt, deserted its insular for a continental residence.

The form of the beak as well as the habits, of this bird, indicate an approach to the Fly-catchers.

In the Ornithology of M. Ramon de la Sagra's Cuba, this species is figured, under the name of Bijirita, which, however, appears to be common to the Warblers. "Though migratory, it seems to breed occasionally in the Antilles, for M. de la Sagra has killed in Cuba, young ones, which were doubtless hatched in the island."

OLIVE WARBLER.*

Sylvicola pannosa.—MIHI.

THE bird described below, a sombre exception to a particularly brilliant family, I cannot refer to any species with which I am familiar; it may, however, be the female of a recorded species. I regret that I did not ascertain the sex of the individual described, the only one that ever fell into my hands. Nor can I give any information concerning it, but that it was shot by Sam, at Basin-spring, on the 8th of October, hopping about low bushes.

* Length 5 inches, expanse 7, flexure $2\frac{4}{10}$, tail $1\frac{9}{10}$, (nearly), rictus $\frac{5}{10}$, tarsus $\frac{9}{10}$, middle toe $\frac{6}{10}$. Irides dark brown; feet dark horn; beak black. Upper parts dull olive; wing-quills blackish with olive edges; the second, third, fourth, and fifth, have a white spot at the base of the outer web, forming a short band. Tail greyish-black. Cheeks blackish-ash. Upper parts yellowish-white, tinged on the breast and sides with dingy olive.

ARROW-HEADED WARBLER.*

Sylvicola pharetra.—MIHL.

THIS is another species, of which I have but a single specimen. It was shot on the 9th of February, in Bognie woods, on the top of Bluefields Peak. I know nothing of its manners, but that it was engaged, as Warblers commonly are, hopping on trees, and peeping for insects. The specimen was a male. Its general aspect is like that of the Black and white Creeper, but it may be distinguished at once by comparison; the colours in *that* being distributed in greater masses, and disposed in broad stripes; in *this*, in small mottlings, or thick spotting, which difference is especially observable on the head. The beak, also, though partly shot away in my specimen, is decidedly that of a *Sylvicola*.

* Length $5\frac{4}{10}$ inches, expanse 8 (nearly), flexure $2\frac{11}{20}$, tail 2, rictus about $\frac{6}{10}$? tarsus $\frac{7}{10}$, middle toe $\frac{6}{10}$. Irides hazel; beak black above, suture and lower mandible grey; feet purplish horn, with pale soles. Head, neck, back, less coverts, chin, throat and breast, mottled with black and white, each feather being grey at the base, and black, bounded on each side by white, at the tip. The black preponderates on the upper parts, the white on the breast, where the black spots take arrow-headed forms. Wing-quills and coverts black; the first primaries have the middle portion of their outer edge narrowly white, and those from the third to the seventh inclusive have a more conspicuous white spot at the basal part of the outer edge. The secondary greater coverts are tipped outwardly with white, the medial coverts more broadly; and these form two bands, but not very notable. Plumage of rump and tail-coverts unwebbed, brownish-grey. Tail-feathers black, with paler edges, the outmost two or three tipped inwardly with white. Sides, thighs, and under tail-coverts grey, with indistinct black centres. Belly greyish white.

FAM.—MUSCICAPADÆ.—(*The Flycatchers.*)

REDSTART FLYCATCHER.*

Setophaga ruticilla.

Muscicapa ruticilla,	LINN. Aud. pl. 40.
Motacilla flavicauda, (*fem.*)	GMEL.
Setophaga ruticilla,	SW.

THE great family of Flycatchers are distinguished by their depressed beak and rictal bristles, and by their general habit of capturing flying insects on the wing, and returning to a resting place to swallow them. The species, before us, however, a bird of remarkable elegance, both of form and colour,—combines with this habit, those of the Warblers; Wilson's assertion to the contrary notwithstanding. It is particularly restless, hopping from one twig to another through a wood, so rapidly, that it is difficult to keep it in sight, though conspicuous from its brilliant contrast of colours; yet it is not a shy bird. A good deal of its insect food it obtains by picking it from the twigs and flowers. About the end of the year, a male was in the habit of frequenting the lawn of Bluefields House, day after day. In the early morning, while the grass was yet wet with dews, it might be seen running on the ground, at which time its long tail being raised at a

* Length $5\frac{3}{8}$ inches, expanse $7\frac{1}{2}$, flexure $2\frac{6}{10}$, tail $2\frac{1}{4}$, rictus $\frac{11}{20}$, tarsus $\frac{8}{10}$, middle toe $\frac{5}{10}$.

small angle, and the fore parts of its body depressed, it had much of the aspect of a Wagtail. It ran with great swiftness hither and thither, a few feet at a time, and during each run, the wings were opened and vibrated in a peculiar flutter with great rapidity. It was, I am sure, taking small insects, as now and then it turned short. Sometimes, instead of running, it took a short flight, but still close to the turf.

One which was wounded in the wing, I put into a cage; on the floor of which it sat, looking wildly upwards, the beautiful tail being expanded like a fan, so as so display the orange-colour on each side. All the while it chirped pertinaciously, producing the sharp sound of two quartz pebbles struck together.

This was the very first of the migrant visitors from the North that I met with, a female having been killed in the mountains of St. Elizabeth as early as the 10th of August. We lost sight of it again about the 20th of April; so that this species remains in the islands upwards of eight months. Yet nearly four weeks before this, I observed a pair engaged in amatory toying, pursuing each other to and fro among the pimento trees.

On the 8th of May, 1838, being at sea in the Gulf of Mexico, not far from the Dry Tortugas, a young male of this lovely species flew on board. It would fly from side to side, and from rope to rope, as if unwilling to leave the vessel, but occasionally it would stretch off to a long distance, then turn round, and fly straight back again; it was not at all exhausted. While I held it, it squeaked and bit at my hand violently and fiercely.

BUFF-WINGED FLAT-BILL.*

Myiobius pallidus.—MIHI.

THERE is much resemblance between this species and the *Tyrannula megacephala* of Swainson's Birds of Brazil, pl. 47; but they are manifestly distinct.

In unfrequented mountain roads, bordered by deep forests, the Flat-bill is very common, and from its fearlessness easily obtained. In the autumn months, the traveller may observe a dozen or more in the course of a mile, sitting on the projecting branches of the way-side woods. There is, however, nothing like association of one with another; like the other Tyrants, it is quite solitary, at least in its occupation. It flies very little, the wings being short and hollow; but sits on a twig, and leaps out at vagrant flies, which it catches with a loud snap, and returns; it utters a feeble squeak as it sits. Sometimes it emits a weak wailing cry, as it flits from one tree to another.

The analogies often observed between animals

* Length 6¼ inches, expanse 8½, flexure 2$\frac{8}{10}$, tail 2$\frac{5}{10}$, rictus $\frac{13}{20}$, breadth at base $\frac{7}{20}$, tarsus $\frac{6}{10}$, middle toe $\frac{4}{10}$. Irides hazel; feet black; beak very depressed, lateral margin convex, upper mandible black, lower pale fulvous, dark at tip. Upper parts olive-brown; wing-quills black, third longest; greater coverts, secondaries, and tertiaries edged with pale brown. Tail blackish, emarginated. Throat ashy, tinged with yellow. Breast, belly, sides, and under tail-coverts, yellowish-brown. Under wing-coverts dull-buff.

possessing no affinity, is curious. The flat, weak bill, darker above than below, the general form, the hollow wings, the loose plumage, and the habit of sitting on a low twig unmoved by the presence of man, this species possesses in common with the Tody.

BLACK-BILLED FLAT-BILL.*

Myiobius tristis.—MIHI.

A VERY common species, frequenting the edges of high woods and road-sides, like the preceding, the manners of these birds being nearly the same. It is a skilful fly-catcher, and a voracious one. I have taken a *Libellula* of considerable size from the stomach of one, which not only filled that organ, but extended through the proventriculus to the œsophagus: the head was downward, which position was of course the most favourable for being swallowed.

When taken in the hand, it erects the crown-

* Length $6\frac{3}{4}$ inches, expanse $9\frac{1}{4}$, flexure $2\frac{9}{10}$, tail $2\frac{3}{4}$, rictus $\frac{17}{20}$, breadth at base $\frac{4}{10}$, tarsus $\frac{3}{4}$, middle toe $\frac{11}{20}$. Irides dark hazel; beak black above, dark brown beneath, formed as that of the preceding. Feet greyish black. Crown deep bistre-brown, softening on the back to a paler hue, slightly tinged with olive; tail-coverts dark umber. Wings black; greater and mid coverts, and secondaries edged with pale umber; the tertials have still paler edges. Tail smoky black, each feather narrowly edged with umber. Sides of head and neck, pale bistre. Chin, throat, and fore neck, ashy-grey, blending on the breast with the pure straw-yellow, which is the hue of the belly, sides, vent, and under tail-coverts. Edge of shoulder pale buff.

feathers, and snaps the beak loudly and often, uttering shrill squeaks also, at intervals. Its note is one of the very earliest; even before the light of day has begun to dim the brilliancy of the morning star, this little bird is vocal. A single wailing note, somewhat protracted, is his ordinary voice, particularly sad to hear, but sometimes followed by one or two short notes in another tone.

I have never met with the nest of either this or the preceding species, but Robinson (MSS. ii. 98,) describing this bird as "the Lesser Loggerhead of Jamaica," says, "they have three young, generally reared in any hollow place of a tree in June." He adds, "they have no note;" but in this he was in error.

FOOLISH PETCHARY.*

Little Tom-fool.

Myiobius stolidus.—MIHL.

For a time I considered this to be the Pewee of Wilson, but its superior size, grey throat, and

* Length 7½ inches, expanse 10½, flexure 3¼, tail 3, rictus 1, tarsus $\frac{9}{10}$, middle toe $\frac{11}{20}$. Irides dark hazel; beak black; feet blackish grey. Upper parts bistre-brown, rather paler on the back. Wing primaries have the basal part of their outer edge, narrowly chestnut; greater and mid coverts, secondaries and tertiaries, edged and tipped with whitish. Tail even, the feathers broadly edged inwardly with chestnut. Cheeks grey, mottled; chin, throat, and fore-breast, greyish white; breast, belly, vent

rufous edges of the wing and tail, have convinced me that it is quite distinct. I have little information to give concerning it that would distinguish it from the other Tyrants. It resides in Jamaica permanently, and is of rather common occurrence, at the edges of woods; it manifests, perhaps, less fear of man than even its congeners, often pursuing its employment of catching insects though a person stand beneath the twig which it has chosen as a station. If it does remove it usually perches again a few yards off, and sits looking at the stranger.

I have not found its nest; but near the end of August, I met some negro boys who had three young ones of this species, which they had just taken from the nest, situated, as they described, in a hollow stump.

GREY PETCHARY.*

Tyrannus Dominicensis.

Muscicapa Dominicensis,	LINN.—Aud. pl. 170.
Tyrannus griseus,	VIEILL. Ois. de l'Am. 46.
Tyrannus Dominicensis,	BONAP.

THE history of this bird shall be mainly told by

under-tail-coverts, and interior of wings pale yellow. Head feathers erectile. Female has the primaries and tail-feathers edged with whitish, instead of chestnut. Two minute cæca.

* Length $9\frac{1}{2}$ inches, expanse $14\frac{1}{2}$, tail $3\frac{8}{10}$, flexure $4\frac{5}{8}$, rictus $1\frac{1}{4}$, tarsus $\frac{9}{10}$, middle toe $\frac{3}{4}$. Irides dark hazel. Intestine 8 inches: two

my valued friend Mr. Hill. "It is along the sea-side savannas and pastures, and among the adjacent hills and valleys, that the migratory flocks of the Grey Petchary swarm at the beginning of September. Occasional showers have given a partial freshness to the lowland landscape; the fields have begun to look grassy and green, and the trees to brighten with verdure, when numbers of these birds appear congregated on the trees around the cattle ponds, and about the open meadows, hawking the insect-swarms that fill the air at sun-down. No sooner do the migrant visitors appear on our shores, than the several birds of the species, that breed with us, quit their nestling trees, and disappear from their customary beat. They join the stranger flocks, and gather about the places to which the migratory visitors resort, and never resume their ordinary abodes till the breeding season returns.

"On their return in spring, they do not appear among us many days before they become exceedingly fat: they are then eagerly sought after by the sportsman, who follows the flocks to their favourite haunts, and slaughters them by dozens. The Petchary is not exclusively an insect-feeder;—the sweet wild berries tempt him. In September the pimenta begins to fill and ripen, and in these groves the birds may always be found, not so much gathered in flocks as thickly dispersed about. It is, however, at sunset that they exclusively congregate; when insect life is busiest on the wing. Wherever the

cæca very minute, about $\frac{1}{8}$ inch long, and no thicker than a pin, at 1 inch from the cloaca. Sexes exactly alike.

stirring swarms abound, they may be seen ranged in dense lines on the bare branch of some advantageous tree. By the end of September, the migrant Petcharies quit us, leaving with us most of those which bred with us."

"The Petchary is among the earliest breeders of the year. As early as the month of January the mated pairs are already in possession of some lofty and commanding tree, sounding at day-dawn that ceaseless shriek, composed of a repetition of some three or four shrill notes, very similar to the words *pecheery—pecheery—pe-chēēr-ry*, from which they receive their name. To this locality they remain constant till the autumn. They then quit these haunts, and congregate about the lowland ponds. At some hour or two before sunset, they assemble in considerable numbers to prey upon the insects that hover about these watering-places. They are then observed unceasingly winging upward and downward, and athwart the waters, twittering and shrieking, but never flying far. They dart off from some exposed twig, where they had sat eight or ten in a row, and return to it again, devouring there, the prey they have caught. Their evolutions are rapid; their positions of flight are constantly and hurriedly changing; they shew at one while all the outer, and at another all the inner plumage; and they fly, checking their speed suddenly, and turning at the smallest imaginable angle. There are times when the Petchary starts off in a straight line from his perch, and glides with motionless wings, as light and buoyant as a

gossamer, from one tree to another. When he descends to pick an insect from the surface of the water, his downward course is as if he were tumbling, and when he rises in a line upward, he ascends with a curious lift of the wings, as if he were thrown up in the air, and were endeavouring to recover himself from the impetus.

"The congregated flocks disappear entirely before the month of October is out. It is only in some five or six weeks of the year that they are reconciled to association in communities. At all other times they restrict their company to their mates, and permit no other bird to divide with them their solitary trees.

"From the window of the room in which I am writing, I look out upon a very lofty cocoa-nut tree, in the possession of a pair of Petcharies. Long before the voice of any other bird is heard in the morning, even when daylight is but faintly gleaming, the shrill unvarying cry of these birds is reiterated from their aerie on the tree-top. Perched on this vantage-height, they scream defiance to every inhabitant around them, and sally forth to wage war on all the birds that venture near. None but the Swallow dares to take the circuit of their nestling tree. At a signal from one of the birds, perhaps the female, when a Carrion Vulture is sweeping near, or a Hawk is approaching, the mate flings himself upwards in the air, and having gained an elevation equal to that of the bird he intends to attack, he starts off in a horizontal line, with nicely balanced wings, and hovering for a moment,

descends upon the intruder's back, shrieking all the while, as he sinks and rises, and repeats his attacks with vehemence. The Carrion Vulture, that seldom courses the air but with gliding motion, now flaps his wings eagerly, and pitches downward at every stroke his assailant makes at him, and tries to dodge him. In this way he pursues him, and frequently brings him to the ground.

"The Hawk is beset by all birds of any power of wing, but the boldest, and, judging from the continued exertion he makes to escape, the most effective of his assailants is the Petchary. It is not with feelings of contempt the Hawk regards this foe:—he hurries away from him with rapid flight, and hastily seeks to gain some resting place; but as he takes a direct course from one exposed tree to another equally ill-suited, he is seen again submitting to the infliction of a renewed visit from his pertinacious assailant, till he is constrained to soar upward, and speed away, wearied by the buffets of his adversary.

"The appearance of the Petchary, when he erects the feathers of his crest, or opens those of his forehead, and shews glimpses of his fiery crown is fierce, vindictive, and desperate. His eye is deeply dark, and his bill, although it greatly resembles, in its robust make, that of the Raven, is even of sturdier proportions than that bird's; the bristles are black, and amazingly strong.

"The Petchary has been known to make prey of the Humming-bird, as it hovers over the blossome of the garden. When he seizes it, he kills

it by repeated blows, struck on the branch where he devours it. I have remarked him, beside, beating over little spaces of a field, like a Hawk, and reconnoitring the flowers beneath him; searching also along the blossoms of a hedge-bank, and striking so violently into the herbage for insects, that he has been turned over as he grabbed his prey, and seemed saved from breaking his neck in his vehemence, only by the recoil of the herbage.

"His nest in this part of the island has seldom been found in any other trees than those of the palm-kind. Amid the web of fibres that encircle the footstalk of each branch of the cocoa-nut, he weaves a nest, lined with cotton, wool, and grass. The eggs are four or five, of an ivory colour, blotched with deep purple spots, intermingled with brown specks, with the clusters thickening at the greater end. The Eagle, flapping his pinions as he shrieks from his rock when the tempest-cloud passes by, is not a more striking picture than this little bird, when, with his anxieties all centred in the cradle of his young ones, he stands in 'his pride of place,' on the limb of his palm, towering high above all other trees, and battling with the breeze that rocks it, and, rush after rush as the wind sweeps onward, flutters his wings with every jerk of the branches, and screams like a fury."

I have little to add to the above detail. With us at the western end of the Island, the Grey Petchary is wholly migratory, not one having been

seen by us from October to April. If its migrations be, as I have reason to think, not northward and southward, but eastward and westward, this fact is easily accounted for, from the greater nearness of our part to Central America, where they probably winter. This species is found in St. Domingo, but not, as it appears, in Cuba, where it seems to be represented by *T. Magnirostris*, D'Orb., nor has it been recognised, except accidentally, in North America. Even its wintering about Spanish Town, seems to be not constant, for from communications made to me by Mr. Hill, the present spring, I infer none had been seen through the winter. In Westmoreland, I observed the first individual after the winter, on the 30th of March, at the Short Cut of Paradise-morass; and a day or two afterwards they were numerous there, and were advancing to the eastward. Yet on the 16th of April, Mr. Hill writes me, "It is worth remarking that, although Grey Petcharies have been several days now with you, they have not made their appearance here yet." He adds the interesting note, afforded by some friends who had in March visited the Pedro kays, that "the Grey Petchary, was seen making its traverse by those rocks," and that "the migratory birds that visited those islets came from the west and departed to the eastward, or, as it was otherwise expressed, they came from the Indian coast, and proceeded on to the coast of Jamaica, coursing from southward and westward to northward and eastward." The dispersion of the arrived migrants along the groves of Jamaica,

seems to be very leisurely, for a month after their appearance with us, Mr. Hill writes, on the 28th of April, "This morning the Grey Petchary made his appearance on the lofty cocoa-nut, *for the first time this season.* He is there now, shivering his wings, on its flaunting limbs, unceasingly screaming *pi-chee-ree-e.* He is turning about and proclaiming his arrival to every quarter of the wind. He is Sir Oracle, and no dog must bark in his neighbourhood."

I have not observed in the vicinity of Bluefields, the predilection alluded to by my friend of this bird for the Palm-tribe. Several pairs have nested under my notice, but none of them were in palm-trees. Of two which I procured for examination, one was from an upper limb of a bitterwood-tree, of no great height, close to a friend's door. It was a cup made of the stalks and tendrils of either a small passion-flower or a bryony, the spiral tendrils prettily arranged round the edge, and was very neatly and thickly lined with black horse-hair. It contained three young, newly hatched, and thinly clothed with a buff-coloured down, and one egg. The other was from a hog-plum (*Spondias*). It was a rather loose structure, smaller and less compact, composed almost entirely of tendrils, which gave it a crisped appearance; a few stalks entered into the frame, but there was no horse-hair within; but one or two of the shining black frond-ribs of a fern, scarcely thicker than hair. The eggs, three in number, were round-oval, 1 inch by $\frac{3}{4}$; dull

reddish-white, handsomely marked with spots and angular clouds of red-brown, much resembling the sinuous outline of land on a terrestrial globe.

COMMON PETCHARY.*

Tyrannus caudifasciatus.—D'ORBIGNY.

D'ORBIGNY in the Ornithology of Ramon de la Sagra's work on Cuba, has described and figured this species, which in its appearance and manners very much resembles the King-bird of the United States, as it does also the preceding species. It is, however, a permanent inhabitant of Jamaica. In Westmoreland and St. Elizabeth's, the name Petchary is applied indifferently to this and the grey species, as the equivalent term *Pitirre*, in Cuba seems to indicate any species of *Tyrannus*, Vieillot has described a closely allied bird, if not identical with ours, by the name of *Tyr. Pipiri.* But in the neighbourhood of Spanish Town, this species is distinguished from the grey, to which the name Petchary is there confined, by the term Loggerhead, which, with us to leeward, is applied to the rufous species, *T. Crinitus.* It is well to be aware of this confusion of local names, or we may

* Length $8\frac{3}{4}$ inches, expanse 13, tail $3\frac{4}{10}$, flexure $4\frac{1}{8}$, rictus $1\frac{7}{20}$ tarsus 1, middle toe $\frac{8}{10}$.

Irides hazel. Intestine short, about $4\frac{1}{2}$ inches, cæca rudimentary: stomach slightly muscular.

be liable to predicate of one species, what is true only of another.

It is one of the commonest birds of Jamaica, both in the lowlands and the hilly districts, nor is it rare even at the elevation of the Bluefields Peaks. It seems to delight in the fruit and timber-trees, which are thickly planted in the pens, and around the homesteads of the southern coast, and everywhere, in fact, where insects are numerous. The larger kinds of insects form the prey of this species as of the former. I have seen one pursue with several doublings a large *Cetonia*, which, however, having escaped, the bird instantly snapped up a *Cicada* of still greater bulk, and began to beat it to kill it, while the poor insect sung shrilly as it was being devoured. It frequently resorts to a tree that overhangs still water, for the purpose of hawking after the dragon-flies that skim over the surface. The size of these insects, and their projecting wings, would seem to make the swallowing of them a matter of some difficulty; for I have noticed that the bird jerks the insect round by little and little, without letting it go, till the head points inward, when it is swallowed more readily. Mr. Hill has noticed a very interesting trait in this bird, so frequently as to be properly called a habit. It will play with a large beetle as a cat with a mouse, no doubt after its appetite has been sated. Sitting on a twig, and holding the beetle in its beak, it suddenly permits it to drop, then plunging downward, it gets beneath the insect before it has had time to reach the ground, and

turning upward catches it as it falls. It sometimes continues this sport a quarter of an hour.

In the winter season, the seeds of the Tropic-birch (*Bursera*) appear to constitute a large portion of the food of our Tyrannidæ. One day in January, I observed two Petcharies on a birch-tree, fluttering in an unusual manner, and stood to watch their proceedings. I found they were feeding on the ripe berries, which they plucked off in a singular manner. Each bird sitting on a twig, seized a berry in his beak, then throwing back his head till he was in a perpendicular position, tugged till the stalk gave way, his wings being expanded, and vibrated all the while to prevent him from falling. Yet, even at this season, they contrive to fill their craws with insects; for one which I dissected the next day, had its stomach filled with hymenoptera and coleoptera, among which were the fragments of a most brilliant little *Buprestis*, the possession of which I envied it. I observed that the stomach was protuberant below the sternum, as in the cuckoos. At this early season, the time of incubation was near; for the ovary of this specimen contained an egg as large as a small marble; and my lad who shot it, told me that this one and its mate were toying and pursuing each other around a tall manchioneel-tree, on one of whose upper limbs he discovered a nest nearly finished.

The nest consists of a loose basket of dry stems of yam, and tendrils of passion-flower, lined with a slight cup of horse-hair and fibres from palmetto-

leaves. Four or five eggs are laid, of a drab hue or reddish-white, with blotches of reddish-brown and bluish irregularly intermixed, but chiefly arranged in the form of a crown around the larger end.

In the month of September they become, in common with their grey congeners, a mere mass of fat, and are at this time in much request for the table. They are supposed to acquire this fatness by feeding on the honey-bees, which then resort in great numbers to the magnificent bloom-spike of the cabbage-palm. Hither the Petchary also resorts, and sitting on a frond captures the industrious insects as they approach. At this time the large and branching spike of blossom, projecting and then curving gracefully downwards, and looking as if exquisitely moulded in white wax, is a very beautiful object; and the pollen from the flowers is diffused so abundantly, that the ground beneath the tree, appears exactly as if it had been visited by a snow-shower.

This appears to be the species alluded to by Robinson in the following note. "They [the Tyrants, *Baristi*, as he calls them,] are all very bold birds, especially the largest species called the Loggerhead, who beats all kinds of birds indiscriminately; he is also the harbinger of the morning, constantly giving notice of the approach of day by his cry. When he is beating a Carrion Crow or other birds, he snaps his bill very frequently; he is a very active, bold bird, and feeds upon insects and lizards. I have seen him give chase

to a lizard round the trunk of a small tree, flying in circles with surprising activity. In beating any large bird, both cock and hen (if both are in the way,) join in the quarrel or scuffle."* In these assaults, the intrepid Petchary does not *always* come off scathless. "And here," says Robinson in speaking of the Red-tailed Buzzard, "I cannot help recollecting an unhappy though deserved ill-fate, which sometimes befals the large Loggerhead. Everybody is acquainted with the pugnacious nature of this little bird; for he attacks and buffets every large bird that happens to fall in his way, snapping his beak and pursuing him with great violence; and among others this great Hawk is often disturbed and beaten by him.

"At Chestervale, in the cultivated ground, it is common for this Hawk to perch upon the top of some dry tree. This situation he chooses that he may the better view the ground beneath, and observe if a rat or other animal should make its appearance. While he sits here upon the watch, 'tis ten to one but he is attacked by the Loggerhead, whom he suffers to buffet and beat him with great patience, without offering to stir once from his place; till, his assailant being quite tired and spent with the violence of his exercise, inadvertently sits down on some twig not far distant from his passive, and, as he may think, inoffensive enemy. That enemy, however, now keeps his eye fixed on him, and no sooner does he begin to preen his feathers, or look carelessly about him, than

* Robinson's MSS. ii. 102.

down pounces the Hawk suddenly upon him, seizes the unwary bird in his talons, and devours him." *

The courage of the Tyrants in defence of their nests, is well known; but it seems at times to become almost a mania. The late proprietor of Mount Airy, in his daily walks about the estate, was attacked with such virulence by a Petchary that was nesting, the bird actually pecking his head, that he was compelled to take out a stick in defence, with which he at length struck down the too valiant bird. Dogs seem especially obnoxious to it, and this not only during incubation; at any time a passing dog is likely to be assaulted by this fierce bird, and if he be so unfortunate as to have any sore on his body, that is sure to be the point of attack. One of my youths, a veracious lad, narrated to me the following circumstance, to which he was witness. A large dog was following his mistress through Mount Edgecumbe Pen, when a Petchary flew virulently at him: on the shoulder of the dog was a large running sore; to this the bird directed his attention: suspending himself over the wound, he clutched with his extended feet as if he wished to seize it thus, snapping angrily with his beak; then suddenly he pecked the wound, while the dog howled in agony. The bird, however, repeated its assaults exactly in the same manner, until the blood ran down the shoulder from the wound; the dog all the while seemingly cowed and afraid to run, but howling most piteously, and turning round to snap at the bird. The woman was at some distance

* MSS.

ahead, and took no notice; and the war continued until my informant left. The Petchary continued, in this case, on the wing; but frequently he alights on the dog to peck him.

Both this and the Grey Petchary, when excited, open and shut the coronal feathers alternately. When opened, the appearance is as if a deep furrow had been ploughed through the plumage of the head, the sides of which are vividly coloured. Occasionally this furrow is opened in death, and remains so: one or two birds being brought me in this condition, when my acquaintance with the species was slight, I suspected that some of the feathers had been plucked out, in order to enhance the value of the specimens by displaying the gayer colour. A male of the present species, which I wounded one day in April, on my taking it up, began to scream passionately, and to open and shut the crown, biting ferociously; another from the same tree, probably his mate, attracted by his cries, pursued me, endeavouring to peck me: and when repelled, continued to gaze, stretching its neck anxiously, whenever the screams were repeated.

In the quotation from Robinson's MSS., page 180, the early habits of this bird were noticed. On the same subject, Mr. Hill writes me, "I know no bird-voice, not excepting 'the cock's shrill clarion,' that is earlier heard than the *pi-pi-pihou* of the Loggerhead Tyrant. In my neighbourhood several of the yards are planted with cocoa-nut trees. On a very lofty cocoa palm to the north of me, a

pair of Grey Petcharies annually nestle in the month of April. On half a dozen less elevated ones to the west of me, several Loggerheads take up their locations as early as January, and build their nests there. I say January, as that is their time for nestling, but I see them there ordinarily by Christmas, and I hear the clang and clatter of their voices before; but it is not till the turn of the year, that they unfailingly chant every morning their peculiar reveillé; singing *pi-pi-pihou, pi-pi—, pipi-pi-pihou,* for an hour from the firing of the Port Royal gun, a little before five, till the sun is well up:—they then descend to some of the lower vegetation round about, and alter their chant from the more musical *pipi-pihou,* to a sort of scream of *pi-i-i-i-i-hou,* for the space of about twenty minutes more; when they cease for the day. It was this remarkable obtrusion of their chant upon the ear, before day-break, in the shortest of our days, that led me to the conclusion that they were the *Tyrannus matutinus* of Vieillot. Buffon, on remarking that no bird is earlier than the Black-headed Pipiri, as he designates it, for he is assured that it is heard as soon as the day begins to dawn, gives two or three striking notes from St. Domingo correspondents, in which this fact is particularly recorded. A Mr. Deshayes in his communication writes, that "the Pipiri seen in the forest, and in ruinate lands, and in cultivated spots, thrives everywhere; but more especially the Yellow-crested Pipiri, which is the more multiplied species; that one delights in places that are inhabited. In winter

they draw near to houses, and as the temperature of this season in these climates, has much the character of spring-time in France, it would seem that the prevailing coolness and freshness fills them with life and gaiety. Indeed never are they seen so full of clatter, and so cheerful as in the months of November and December; they then tease each other, and dash along somersetting (*voltigant*) one after the other, as a sort of prelude to love-making.'" My friend again writes me on the 30th of April:—"As I lay fever-wake on the morning of the 27th, I heard again the Loggerhead Tyrant singing most musically his day-dawn salutation of *pipi-pihou*. My sister, who listened to the early songster too, thinks that OP, PP, P, Q, is his morning lesson; and it is, perhaps, the closest resemblance to his chant. He is a scholar after the fashion of modern Infant schools. His alphabet and multiplication-table are a song. He repeated his lesson the following morning, but I have slept so soundly since, that I cannot say whether he has continued to wake to his learning at the firing of the Port Royal gun."

RED PETCHARY.*

Loggerhead.—Great Crested Flycatcher.—WILS.

Tyrannus crinitus.

Muscicapa crinita, LINN.—Aud. pl. 129.
Tyrannus crinitus, BONAP.

THOUGH found in Jamaica through the winter, the Loggerhead is not then very common; but in March many begin to frequent the groves, and trees of the pastures; and may be observed pursuing each other in devious flights, uttering a rattling cry, harsh, though not loud. As they sit in a tree, they emit at intervals a loud *pirr*, in a plaintive tone, ruffling the plumage, and shivering the wings at the same time. Its general habits are those of its congeners, but it lacks their pugnacity. Very large insects form its ordinary prey: one I shot in the very act of taking a large *cicada*, while sitting on a twig, the insect was still in its throat when killed. In November I have found the stomach filled with the large red-berries of the Tropic birch.

Sam tells me he has found the nest of this bird, containing four young, at the very bottom of a hollow stump, in a mountain district.

* Length 9 inches, expanse 13¼, flexure 4⅛, tail 4, rictus 1$\frac{3}{10}$, tarsus 1, middle toe ¾.

BLACK SHRIKE.*

Judy.—Mountain Dick.

Tityra leuconotus.

Tityra leuconotus, G. R. GRAY.—Gen. pl. 63.

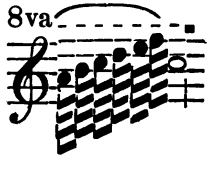
THIS species, hitherto undescribed, is named and figured by Mr. G. R. Gray, in his "Genera of Birds," from specimens procured by myself. It is not uncommon in the mountain districts of Jamaica, where, from the remarkable diversity in the appearance of the male and female, they are distinguished by separate local names. The black male is known by the feminine appellation of Judy, while the chestnut-headed female receives the masculine soubriquet of Mountain Dick. Mr. Gray, from his acquaintance with the genus, I presume, was able to identify the sexes by an examination of dried skins, while I was long in coming to the same conclusion, from observation of the living birds. Yet I early suspected it; their form and

* Length $7\frac{1}{2}$ to 8 inches, expanse 13, tail $3\frac{1}{5}$, flexure 4, rictus $1\frac{1}{10}$, breadth of beak at base $\frac{6}{10}$, tarsus 1, middle toe $\frac{8}{10}$.

Male. Irides, very dark hazel; beak black; feet blue-grey. Whole plumage black, save that the bases of the scapulars are pure white, forming a white band on each shoulder, generally concealed by the plumage of the back. The throat and breast are of a paler hue, and the upper parts are glossed with blue and green reflections. Female. Head rich umber, softening into bay on the throat and breast; throat whitish; back brownish grey; wing-feathers umber externally, blackish medially, paler on the inner webs: tail blackish umber, paler beneath; belly pale grey. Head large; crown feathers erectile. Intestine $9\frac{1}{2}$ inches. Two cæca, rudimentary; like minute pimples.

size were the same; their manners were the same; their singular call was the same; they were almost always found either actually in company, or else the one calling, and the other answering, at a short distance from each other. It remained, however, to prove the fact; and I accordingly dissected every specimen that fell in my way, for many months; the result of which was that every "Judy," was a male; and that almost every "Mountain Dick" was a female; to this latter there were but two exceptions; two in the umber plumage were indubitably males, but in one of them, shot in February, the dark brown hue of the head was almost obliterated, and replaced by black, the tips and edges only of the feathers being brown. Probably, the male of the first year bears the colours of the female, a supposition afterwards confirmed.

Though more frequently seen at a considerable elevation from the sea, we occasionally meet with these birds in the lowlands; they are, however, rather recluse, affecting woods and lonely places. Here as they hop from one twig to another, or sit hid in the foliage of a thick tree, they utter a rapid, and not unmusical succession of notes, as if attempting to compress them all into one. Some idea may be formed of it, by playing *with one hand* the following notes on a pianoforte.



The notes are occasionally poured forth in the air as the bird flits from tree to tree. But very commonly it is heard, without any variation, from the male

and female alternately, seated on two trees, perhaps on the opposite sides of a road; thus:—The Mountain Dick calls, and the Judy immediately answers; then a little pause;—another call from the Mountain Dick, and an instant answer from Judy;—until, after a few successions, the Judy gallantly yields the point, and flies over to the other tree to join his friend. In February, I have heard it repeating a note somewhat like *che-w*.

This species is bold and fierce in self-defence, the female no less than the male. On several occasions, when I have shot, and but slightly wounded, one, it would make vigorous efforts to escape by running; but on being taken in the hand and held by the legs, it would elevate the crown feathers, turn the head up and bite fiercely at my fingers, seizing and pinching the flesh with all its force; striving at the same time to clutch with its claws, and screaming vociferously. I have never seen it pursue other birds in the aggressive manner of the true Tyrants; nor, as far as I am aware, does it capture insects in the air, notwithstanding that the rictus is defended by stiff bristles. Stationary insects are usually the contents of the stomach, particularly large bugs, (*Pentatoma*) and caterpillars, and sometimes the eggs of insects. In the winter the berries of the *Bursera* or Tropic Birch, constitute a large portion of its food.

In April the Judy begins to arrange the domestic economy of the season; and if the cradle of his young is not so elaborate a structure as some others, it makes up in quantity what it lacks

in quality. In the latter part of this month, my negro lads, being on a shooting excursion, observed on Bluefields Mountain, a domed nest, made apparently of dried leaves, about as large as a child's head, suspended from the under side of a pendent branch of a tall tree. They watched awhile to discover the owner, and presently saw the female of the present species enter, and re-emerge, while the male was hopping about the tree. A day or two after, I myself observed a similar nest, similarly situated, beneath one of the pendent branches of a tall cotton-tree, at Cave, on the road to Savanna-le-Mar. It appeared to be composed of loose trash, rather a ragged structure, but evidently domed, with the entrance near the bottom. Both the male and female were playing and calling around it, and the latter at length went in. On the 11th of May, passing that way again, I observed this nest to be considerably larger, not less than a foot in diameter, as well as I could judge from the great elevation; its outline, however, was still ragged. I estimated the height of the nest to be between seventy and eighty feet, though on the lowest branch of the tree, and that pendent. Yet this Ceiba had not attained the giant dimensions common to the species. A few days after this, Sam saw a third nest, formed and placed exactly as in the former cases, so that I concluded this to be the usual economy. A fourth example, however, showed me, that the lofty elevation is not indispensable, as also that I had not yet seen the largest specimens of the nests. On

a branch of a small cedar (*Cedrela*) that overhangs the high-road at Cave, I had noticed early in June what appeared to be a heap of straw, tossed up by a fork and lodged there, which the action of the weather had in some degree smoothed at the top, the ends trailing downwards. One day, however, as I was looking up at it, I saw the brown female of this species emerge from the bottom, and presently return, entering at a narrow hole beneath. As it was not more than twelve or fifteen feet from the ground, I immediately sent my lads to climb the tree, and cut the branch, which they accordingly brought me, with the huge nest attached. The boys reported that it was empty, and that it had four entrances; but on examination, I found that every one of these was merely a hollow in the immense walls, produced by the receding of one part of the loose materials from another. While they held it up in the position it had occupied on the tree, I searched beneath for the true entrance; which, when I had found it, I had much difficulty to find again, so concealed was it by the long draggling ends of the mass. On inserting my finger, however, I felt the soft and warm plumage of young birds, and pulled out three, almost fully fledged. All three had the plumage of the female, but one was manifestly darker than the others: if this was, as I presume, a cock, the conclusion above, that the young male bears the livery of the female, is confirmed. As I did not want the young, I placed them on a lower limb of a large tree in the yard; and as, on the

next day, I saw two of them about the tree lively and active, and as one flew a distance of, perhaps, thirty feet, I trust that they did well, and survived their premature exposure to the world. To return to the nest, however: I found it a loose, oblong mass, flattened on two sides, measuring in height about two and a half feet, (though the ends hung down to the length of four feet,) in width more than two feet, and in thickness about one foot. It was composed almost entirely of the stems and tendrils of passion flowers, mixed, however, and that all through the structure, with bright-yellow, silky spiders' nests, and the downy filaments of some cottony herbs. The cavity was not larger than a man's two fists, and was not, in any measure, lined: it descended within the entrance, though the latter faced the ground.

WHITE-EYED FLYCATCHER.

Sewy-sewy.

Vireo Noveboracensis.

Muscicapa Noveboracensis,	GM.—Aud. pl. 63.
Muscicapa cantatrix,	WILS.
Vireo Noveboracensis,	BONAP.

THIS modest little bird is not uncommon throughout the year. It manifests little fear of approach,

* Length $4\frac{1}{2}$ inches, expanse $6\frac{5}{8}$, flexure $2\frac{8}{10}$, tail 2, rictus $\frac{5}{10}$. tarsus $\frac{8}{10}$, middle toe $\frac{8}{10}$. Intestine 4 inches, two minute, rudimentary cæca.

allowing one to come within a few feet, as it peeps about among the twigs of low trees and shrubs. It rather seems to have a good deal of curiosity, for it will peep at a person approaching, and if he move slowly and avoid anything to provoke alarm, will hop gradually down from twig to twig, stretching out its neck, until it is almost within touch. Three or four will sometimes chase each other among the branches, and from bush to bush, uttering at intervals a monotonous chirruping. Its notes are very varied; sometimes a loud *chewurr*, or *sweet-will*, uttered with deliberation and much mellowness of tone. I have heard it in March uttering with surprising loudness a single clear and shrill whistle, slightly modulated: after a while it changed this to a double note, *to-whit, to-whit*, equally loud and piercing. About the same season I have listened to *che-che-che-churrrr;* and in May, *sweet, sweet, sweet, sweet, tŏ-too.*

I have never found anything but seeds in the stomach of this bird; though I do not doubt that it eats insects also.

The White-eyed Flycatcher is one of those species that are only partially migratory; during the summer it spreads over the United States. It is found throughout the year in our sultry island, though with diminished numbers in the summer.

JOHN-TO-WHIT.*

Red-eyed Flycatcher. WILS.—*Whip-Tom-Kelly.* SLOANE.

Vireosylva olivacea.

Muscicapa olivacea, LINN.—Aud. pl. 150.
Vireosylva olivacea, BONAP.

MUCH oftener heard than seen, though not unfamiliar to either sense, this sober-coloured bird is one of those whose notes have such a similarity to articulations as to procure them a common appellation. The Flycatchers, in general, are not very vociferous, but this is pertinacious in its tritonous call, repeating it with energy every two or three seconds. It does not ordinarily sit on a prominent twig, or dart out after insects, though I have seen one in eager, but unsuccessful pursuit of a butterfly (*Terias*), but it seems to love the centre of thick trees, where it sits announcing its presence, or flits from bough to bough as you approach; so that it is not easy to get a sight of it.

This bird does not winter with us, but leaves with the Grey Petchary, at the beginning of October. It returns early, and like the bird just

* Length 6¼ inches, expanse 10, flexure 3¼, tail 2$\frac{3}{10}$, rictus $\frac{17}{20}$, tarsus $\frac{8}{10}$, middle toe $\frac{5}{10}$. Intestine 7½ inches; two minute cæca, merely rudimentary.

named, evidently makes an eastward progress, arriving at the south-west end of the island first. On the 26th of March, on my return to Bluefields, after a visit to Spanish town, I heard its well-known voice, but my lad had noticed it a week before. From this time, every grove, I might almost say every tree, had its bird, uttering with incessant iteration and untiring energy, from its umbrageous concealment, *Sweet-John!—John-to-whit!—sweet-John-to-whit!—John-t'whit!—sweet-John-to—whit!* —I can scarcely understand how the call can be written "*Whip-Tom-Kelly*," as the accent, if I may so say, is most energetically on the last syllable. Nor have I ever heard this appellation given to it in Jamaica. After July we rarely hear *John-to-whit*,—but, *to-whit—to-whoo;* and sometimes a soft simple chirp, or *sip, sip,* whispered so gently as scarcely to be audible. This, however, I have reason to believe, is the note of the young, for I have heard young ones repeatedly utter it, when sitting on a twig, receiving from time to time, with gaping beak, and quivering wing, the food contributed by the dam.

The food of the John-to-whit is both animal and vegetable. In March I have found in its stomach the seeds of the Tropic Birch, and in April the berries of Sweet-wood, in an unripe state. In the same month, I observed one hunting insects by the borders of Bluefields rivulet in which I was bathing; and so intent was it upon its occupation, that it allowed me to approach within a foot of it before it flew. It sought insects suc-

cessfully among the grass and low herbage, perching on the stalks of the weeds, and jumping out after stationary, as well as vagrant, prey. I observed it eat two spiders' nests, which it masticated, as if peculiarly savoury. As it sat, it vomited a little white body, which I found to be the globose seed of the misseltoe berry.

Incubation takes place in June and July. The nest is rather a neat structure, though made of coarse materials. It is a deep cup, about as large as an ordinary tea-cup, narrowed at the mouth; composed of dried grass, intermixed with silk-cotton, and sparingly with lichen and spiders' nests, and lined with thatch-threads. It is usually suspended between two twigs, or in the fork of one, the margin being over-woven, so as to embrace the twigs. This is very neatly performed. Specimens vary much in beauty: one before me is particularly neat and compact, being almost globular in form, except that about one-fourth of the globe is wanting, as it is a cup. Though the walls are not thick, they are very firm and close, the materials being well woven. These are fibres of grass-like plants, moss, a few dry leaves, flat papery spiders' nests, with a little cotton or down for the over-binding of the edges. It is lined smoothly with fibres, I know not of what plant, as slender as human hair. Another nest, similarly formed, has the cavity almost filled with a mass of white cotton, which looks as if thrust in by man, but that those filaments of the mass that are in contact with the sides, are interwoven with

the other materials. As it is picked cotton, it must be a bit stolen from some house or yard, not plucked by the bird from the capsule. The eggs, commonly three in number, are delicately white, with a few small red-brown spots, thinly scattered over the surface, sometimes very minute and few. Their form is a somewhat pointed oval, measuring $\frac{9}{10}$ inch, by rather less than $\frac{13}{20}$.

FAM.—AMPELIDÆ. (*The Chatterers.*)

CEDAR-BIRD.

Ampelis Carolinensis.

Bombycilla Carolinensis,	BRISS.—Aud. pl. 43.
Ampelis Americana,	WILS.
Bombycilla cedrorum,	VIEILL.

FOR the history of this elegant bird, which has never fallen under my notice in Jamaica, I refer to the American ornithologists. My reason for noticing it here, is the following note of Mr. Hill's.

"In severe winters on the continent, we have been visited by that American species of the Waxwing usually called the Cedar-bird. I have been informed that in the Christmas of 1836, several in a flock were seen about the cashaw-trees of Spanish town. Nothing is known of their habits with us, except that they were shy, and scudded about, a dozen or twenty together, and very pro-

minently displayed the scarlet, wax-like ornaments resulting from the flattening of the shafts of the secondary feathers of the wings."

SOLITAIRE.*

Muscicapa armillata,	VIEILLOT.
Myiadestes genibarbis,	SWAINSON.
Ptilogonys armillatus,	G. R. GRAY.—Gen. B. pl. 69.

WANDERING among the woods on the summit of the mountain ridge that rises behind Bluefields, I had often heard in the spring, proceeding from the deep forests, a single clear note, lengthened and mellow as the tone of a flute, sometimes alone, sometimes followed by another, about two tones lower. The notes were singularly sweet, and their sudden recurrence at rather long intervals, in the

* Length 8 inches; expanse 11½; flexure 3½; tail 3¾; rictus $\frac{8}{10}$; breadth of beak at base $\frac{4}{10}$; tarsus 1; middle toe $\frac{15}{20}$.

Irides hazel, or dull orange; beak black; feet bright fulvous, claws black. Upper parts blue-grey; wing-quills black with grey edges, the bases of the interior primaries white, visible when expanded; the greater primary coverts, and that part of the primaries succeeding the white, deeper black, unedged with grey. Tail black, uropygials grey; a short white line near the tip of the inner web of the third true tail-feather from the middle, increases on each outwardly, till the fifth is almost wholly white. Cheeks black; a spot at base of lower mandible, and lower eyelid, white; chin and throat rust-red. Breast ashy-grey, paler on belly; vent and under tail-coverts rusty orange. Edge of shoulder white. Intestine 7 inches: two cæca, so small as to be almost rudimentary. Sexes alike.

lone and sombre silence of that lofty elevation, imparted to them a romantic character, which made me very desirous to discover their author. As the summer came on, however, I ceased to hear them: but in the beginning of October, as I was wandering again in the same locality, I was again startled by the interesting sounds. As I proceeded on the very lonely road, through the humid woods, where the trees were loaded with orchideæ and wild-pines, and the dank stones hidden by ferns and mosses, the notes became more frequent and evidently nearer. It being useless for a white man, with shoes, to attempt to follow retiring birds among the matted woods, tangled and choked with climbers, and strewn with loose stones, I sent in Sam with a gun, with orders to follow the sound. He crept silently to a spot whence he heard it proceed, and saw two birds of this species, which neither he nor I had seen before, chasing each other among the boughs. He shot one of them. As he was coming out into the road, he imitated the sound by whistling, and was immediately answered by another bird, which presently came flying to the place where he was, and alighted on a tree at a little distance. He fired at this also, and it fell; but emitted the remarkable note at the moment of falling.

But it is at early day,—when the dew lies so heavily on the broad-leafed cocoes of the provision grounds, that from every leaf you might collect a gill of sparkling water; while the mosses and ground-ferns are moist as a saturated sponge;

before the sun has peeped over the distant mountain-peaks, and before the light has struggled into the gloomy forest on either side;—it is at early day, that if we traverse some narrow rocky bridle-path that winds around the hill-sides, choked up with jointer and glass-eye berry, and overhung by towering Santa Marias, cabbage-palms, and tree-ferns, we become familiar with this interesting bird. The voices of many are then heard saluting the opening day, some near at hand, some scarce audible in the distance; and as all do not pipe in the same key, we sometimes hear beautiful and startling chords produced. Although there is a richness in the tones, which the human voice in whistling can by no means attain, yet the birds will frequently respond to an imitation of their call. Now and then we may obtain a sight of one, or a pair, as they seem generally in pairs, sitting, with a melancholy absorbed air, on some low tree a little way within the forest, manifesting little alarm or curiosity.

It was soon after I became acquainted with this bird that I received the following note from Mr. Hill: in reference to an intention which I then had of ascending that magnificent ridge called the Blue Mountains, whose summits are 8000 feet high.—"There are two living attractions in these mountains, a crested snake, and a sweetly mysterious singing bird called the Solitaire. This bird is a Thrush, and it is worth a journey to hear his wonderful song. I find among some detached notes of mine, the following memorandum respect-

ing a similar bird in the smaller West Indian islands. 'The precipitous sides of the Souffriere mountain in St. Vincent,' says a writer describing the volcano which so disastrously broke out there in 1812, 'were fringed with various evergreens, and aromatic shrubs, flowers, and many Alpine plants. On the north and south sides of the base of the cone were two pieces of water, one perfectly pure and tasteless, the other strongly impregnated with sulphur and alum. This lonely and beautiful spot was rendered more enchanting by the singularly melodious notes of a bird, an inhabitant of those upper solitudes, and altogether unknown to the other parts of the island; hence supposed to be invisible, though it certainly has been seen, and is a species of merle.' I extract my notes on the Haytian bird: though I have seen Jamaica specimens, I never visited their mountain haunts. 'As soon as the first indications of day-light are perceived, even while the mists hang over the forests, these minstrels are heard pouring forth their wild notes in a concert of many voices, sweet and lengthened like those of the harmonica or musical glasses. It is the sweetest, the most solemn, and most unearthly of all the woodland singing I have ever heard. The lofty locality, the cloud-capt heights, to which alone the eagle soars in other countries,—so different from ordinary singing-birds in gardens and cultivated fields,—combine with the solemnity of the music to excite something like devotional associations. The notes are uttered slowly and distinctly, with a strangely-measured exactness. Though

it is seldom that the bird is seen, it can scarcely be said to be solitary, since it rarely sings alone, but in harmony or concert with some half-dozen others chanting in the same glen. Occasionally it strikes out into such an adventitious combination of notes, as to form a perfect tune. The time of enunciating a single note, is that of the semi-breve. The quaver is executed with the most perfect trill. It regards the major and minor cadences, and observes the harmony of counter-point, with all the preciseness of a perfect musician. Its melodies, from the length and distinctness of each note, are more hymns than songs. Though the concert of singers will keep to the same melody for an hour, each little coterie of birds chants a different song, and the traveller by no accident ever hears the same tune.' " In another letter he says, " Buffon notices the Solitaire under the title of the Organist. He thus speaks of it,—' In St. Domingo the name of *Organist* has been given to this little bird, because, in ascending from grave to sharp, it sounds all the tones of the octave. It is not only very singular but very agreeable. Chevalier Fabre Deshayes writes, that, in the southern parts of St. Domingo in the high mountains, there is a very rare but very celebrated bird, called the *Musician,* whose song can be set down by notes. The Musician of M. Deshayes, it is to be presumed, is the same with our Organist.* In M.

* There is some confusion here. Our Solitaire has no resemblance to " L'Organiste de St. Domingue," Pl. Enl. 809, (*Pipra musica* of Gmel. and Lath.) nor to " L'Euphone Organiste " of Vieillot (Gal. Ois.) which is

Page Dupretz's History of Louisiana, there is a description of a small bird which they call the Bishop, and which we believe to be the same with our Organist. Its plumage being blue passing into violet, it has hence obtained the name of Bishop. It is so sweet-throated, so flexible in its tones, and so soft in its warblings, that those who once hear it become somewhat measured in their praises of the Nightingale. The notes of its song are lengthened out like those of a *miserere*. Whilst it sings it does not seem to draw breath; but it rests a double time before it recommences, and this alternation of singing and resting will be continued for two hours.' "

When I received these notes from my friend, and had identified my bird with his description, I had never heard more than two notes in succession. Curiosity impelled me to visit their lofty solitudes often through the winter, and at length on the 3rd of February, when they were abundant, I heard three successive notes of different tones, proceed from the same bird; exactly like so many notes of a psalm, played in slow time. And about three weeks later, I find this note in my journal; I have at length heard the *song* of the Solitaire; the long clear notes, followed by many others of varying length, and different tones, but separated by pauses rather too long to make a piece of music, causing the whole to seem disjointed; but with much

an Euphonia, allied to our Blue Quit, (see p. 238,) but with brighter colours. I incline to think that Deshayes is writing of our bird; but certainly not the others, unless they attribute the notes erroneously.

sweetness. If I may conjecture, these true melodies are peculiar to the nuptial season, and indicate that the period of incubation is either begun or near; a time that generally exerts much influence on the singing of birds.

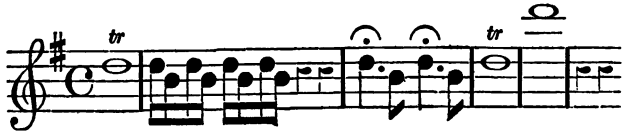
From that time they filled the woods with their solemn music, until April; when they began to become scarce, and by the middle of May not one was to be heard or seen. I concluded that they were migratory, and had now departed from the island for the summer; but on mentioning the fact to Mr. Hill, he informed me about the beginning of June, that a friend of his who had travelled through the Coona-coonas a day or two before, (a district of the Blue Mountains, in which Mr. Purdie heard them in his botanical tour, and at the same season,) had heard them singing by scores. And he adds, "My Haytian notes relate to two visits to the mountains they inhabit in that neighbour island; the first was in August, the second in June; and they were there in the lofty pine forests in hundreds." The curious fact of the total disappearance of the species from the Bluefields Peaks during the summer, while yet present in the island, leads me to conjecture, that they may be subject to the same instinct as influences migratory birds, but leading them to seek a colder climate, not in a northern latitude, but in a loftier elevation. The Peaks of Bluefields, though the highest land in the western part of the island, are not more than 2600 feet high, and therefore far less elevated than the ridges of the eastern end.

As far as I know, the food of the Solitaire is exclusively berries: I have never found an insect in the stomachs of many that I have dissected. Mr. Hill found in one, the berries of a mountain Rubus, like the blackberry. In the Autumn, I have detected those of the misseltoe, but more commonly those called glass-eye berries, from their constituting the chief food of the Merle of that name. In February, the pimento groves, which cover the mountain-brow are loaded with fruit, not soft and sweet and black, as when ripe, but hard and green, and in the very state in which it is picked to be dried for commerce. The temptation of these berries draws the Solitaires from their seclusion, and we not only hear their clear notes trilled from every part of the groves, but see them familiarly eating, at the edges of the pastures, and by the roadsides. It is worthy of remark that their companions in retirement, the Glass-eyes, accompany them also in these feeding excursions, and partake of the feast. I found the stomachs of both species at this season, loaded with the green pimento.

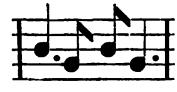
The two specimens which first came into my hands, early in October, manifested signs of a seasonal change of plumage. One had the head prettily covered with pale rusty spots, each feather being thus tipped: several of the body feathers were similarly tipped. This was moulting, and I perceived that it was the old feathers which were tipped, the new ones being uniformly grey, whence I infer the spotted character to be that of the

summer dress, perhaps extending to all the clothing feathers. The other specimen exhibited the same peculiarity, but in a less degree.

I have much pleasure in adding the following note contained in a letter from my friend, received since my arrival in England. Mr. Hill, having made some inquiries of a gentleman residing among the Blue Mountains, Andrew G. Johnston, Esq., received the following reply:—"I have no copy of my musical score of the Solitaire's song. The bird *now* [July 27th] uses only its long breve notes and its octave, often out of tune, more often so than perfect. In the spring they are very numerous in the deep forests, and warble very prettily, somewhat like this:—

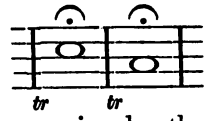


sometimes thus—



The pointed crotchets are very sweet sounds, and seem to sound E—vil evil. I tried in vain to get one this spring, but I find the negroes know nothing about them. Hearing them one day singing, I asked two maroon-men who also listened, what birds they were. One said *a grey speckled bird, mottled like a guinea-fowl:* the other that it was black, and red about the rump and under the wings." My conjectures on both points, are thus

confirmed. I may add that the most common notes that I have heard are these.



Vieillot, who first described the species by the name of *Muscicapa armillata*, says that "it inhabits the Antilles, but is very rare in the greater islands." His figure, pl. 42, is poor, both as regards form and colour. Mr. Swainson's figure of *Myiadestes genibarbis*, (Nat. Lib. Flycatchers, pl. 13,) *if meant* for this species, is better as to colouring, but neither its form nor attitude is correct. Moreover, as he says, its body is not much larger than that of the robin, and mentions white lines on the black ear-coverts, it is with me a matter of doubt; especially as he speaks of the intimate resemblance which it bears to our common robin, "not merely in the red colour of the throat," but in form; a resemblance certainly not discoverable in the living bird.

The figure in Mr. Gray's Genera of Birds was drawn from one of the specimens procured by me in Jamaica, and is in winter plumage.

FAM.—CORVIDÆ.—(*The Crows.*)

BLACK-HEADED JAY.*

Cyanocorax pileatus.

Corvus pileatus, ILL.—Pl. col. 58.

THIS fine bird was brought to Mr. Hill, about the end of the year 1844, from the mountains of St. Andrews, by a negro who stated that he had caught it near Newcastle. Its wings were cut; which at once excited the suspicion that it had been a caged bird, but, on a moment's examination, it was perceived that its perfect cleanness and the smoothness of its plumage decisively indicated a state of freedom and wildness. The man stated that having caught it alive in the garden of his cottage, which, (from the circumstance that the cottage-gardens, in the precipitous mountains, often run into narrow cliffs and corners, environed as if by enormous walls,) he might readily do, he had endeavoured to keep it alive, and had clipped both its wings for its detention. After a few days, however, it died, probably for want of proper food, and he brought it to Kingston, to dispose of it for a trifle.

I find by reference to Temminck, Pl. col., that this specimen, now in my possession, is a female;

* Length 14 inches, tail $5\frac{8}{10}$, rictus $1\frac{8}{10}$, tarsus $2\frac{8}{10}$, middle toe $1\frac{6}{10}$.

the male has the belly yellowish. His figure is also a female. He ascribes the species to Brazil and Paraguay.

JABBERING CROW.*

Gabbling Crow.

Corvus Jamaicensis.

Cornix Jamaicensis, BRISS.
Corvus Jamaicensis, GMEL.

IN the wildest parts of the mountain regions of Jamaica, where the perilous path winds round a towering cone on the one hand, and on the other looks down into a deep and precipitous gully; or where a narrow track, choked up with tree-ferns on which the vertical sun looks only at noon-day, leads through the dark and damp forest to some lonely negro ground, the traveller is startled by the still wilder tones of the Jabbering Crow. So uncouth and yet so articulate, so varied in the inflexions of their tones, are these sounds, that the wondering stranger can with difficulty believe he is listening to the voice of a bird, but rather supposes he hears the harsh consonants, and deep guttural intonations of some savage language. All

* Length 16½ inches, expanse 28, flexure 9½, tail 5¾, rictus 2, tarsus 2, middle toe 1½. Intestine 30 inches; two cæca, situated close together, on the inferior side of the rectum, about ½ inch from cloaca; $\frac{6}{10}$ inch long, slender. Irides greyish hazel.

the Crows are garrulous, and several are capable of tolerable imitations of human speech, but the present is the only example I am aware of, in which the language of man is resembled by a bird in a state of nature. The resemblance, however, is rather general than particular; every one who hears it is struck with its likeness to speech, though he cannot detect any known words: it is the language of a foreigner. One cannot easily convey an idea of the sounds by writing; but the following fragments which the negroes have been able to catch from the learned bird's own mouth, will give some notion of their character. "Walk fast, crāb! do buckra work.—Cuttacoo* better than wallet." It must not be supposed that these words uniformly represent the sounds; these and similar combinations of harsh consonants and broad vowels, are varied *ad infinitum*, as are also the tones in which they are expressed. For myself, I have thought them ludicrously like the very peculiar voice of Punch in a puppet-show; others have fancied in them half-a dozen Welshmen quarrelling. These strange sounds are generally poured forth in *sentences*, of varying length, from the summit of some lofty tree, or in the course of the bird's passage from one to another.

In some parts of the mountains they are not uncommon, though their loquacity would induce us to think them more numerous than they are, for we rarely see more than two or three at once. They are social, but not gregarious; and much of their

* A *cuttacoo* is a negro's little hand-basket.

time is spent in visiting successively the summits of those trees that tower above the rest of the forest, the Santa-Maria, the bread-nut, the broad-leaf, and the cotton-tree. As these visitations are often performed alone, I imagine that the gabbling cries are calls to their companions, especially as, if another comes within hearing, he is pretty sure to visit his clamorous brother, and enter into noisy conversation with him. After spending a few minutes on one tree, during which they do not, *generally*, change their position, otherwise than by walking deliberately along the branch, they both wing their way to the next station, not side by side, but one a little behind the other, both calling as they go. The bleached and bare limbs of a dry tree are always selected, when one of the requisite elevation is within range, as affording most fully that which they seem to delight in, an unobstructed prospect. Sometimes they do alight on lower trees, but then they are very wary and suspicious, so that it is a difficult matter to get within shot of one. When out of gun range, which they seem to estimate pretty accurately, they are much more careless of a passing stranger. Their flight is heavy and slow. They scarcely ever desert the solitudes of the mountains; two thousand feet is the lowest limit at which I have known them, with two exceptions. The one is that in certain lofty woods surrounding the extensive morass in Saltspring Pen, near Black river, I have heard the voices of these birds clamorously uttered, in the latter part of November. The other instance occurred behind Pedro Bluff, but little above the level of the sea, where I heard this bird in June.

The food of the Jabbering Crow is principally vegetable. Of several shot in autumn, the stomachs contained various berries, some fleshy, others farinaceous. The stomach is a muscular sac, but not a gizzard. Descending in the early months of the year to the ripening sour sops, on which it feeds, it is then much more approachable, but at the same time more silent. And about the same time, the seed of the bitter wood is ripe, which also attracts him. One of these trees is in the yard of a house at Content, where I occasionally sojourned; this was generally visited at dawn of day, and sometimes in the evening, by the Crows. I have been amused by the intelligence which they manifest in approaching it: a company of two or three will come into the neighbourhood, and alight with much clamour on some tree in the woods, a few rods distant; we hear no further sound, but presently one and another are seen stealing on silent wing to the bitter-wood, where they nibble the berries in all stillness and quiet. I could not help thinking that the noisy and ostentatious alighting on the first tree was but a feint to prevent suspicion, as if they should say, "Here we are, you see; this is the place that we frequent." And this, I am informed, is not an accidental case, but a habit. The pimento also, which in its green state is eaten by so many of our birds, tempts the Jabbering Crow in February from his forest fastnesses, to the low but dense groves that clothe the mountain brows.

An intelligent person has informed me, that it will take advantage of a small bird's being entangled in a

withe, to kill and eat it; and that when a boy, amusing himself by setting springes for small birds, he has occasionally known them to be taken out of the springe by the Jabbering Crow. These statements, at least as far as the animal appetite is concerned, are in some measure confirmed by an experiment with one I had alive. One day in December, hearing a strange querulous sound proceeding from the top of the woods near me, I sent Sam to find the cause. He ascertained it to proceed from one of two Jabbering Crows, perched side by side on the top of a tree; the vociferous one being evidently young, though in full plumage, and capable of flight, for it was shivering its wings, while with open beak receiving something from the mouth of the other, doubtless its parent. He shot the old one, and slightly wounding it in the wing, brought it to the ground, where it ran so vigorously, that he had difficulty in securing it. It was rather formidable too; for it clutched his hand with its claws so forcibly, as to give pain; and afterwards, as I was holding it, it nipped my finger with the point of its powerful beak, and took the piece out. When turned into a room, it climbed about the various objects, by walking, and taking considerable jumps, striving to gain the highest elevation it could attain, where it sat, moody, but watchful. I presented to it the flesh of one side of the breast of a bird just skinned. He seized it greedily, and, after carrying it about a little, attempted to swallow it. In this he did not succeed without many efforts, as the piece was large: he several times tried to toss it

while in his beak, and also drew it out by setting his foot on it, and took it in another position; but seemed to have no power of dividing it.

Robinson says, "They are great devourers of ripe plantains and bananas, and also rob the wild pigeons of their eggs and young. When tame, they are very droll and diverting, and as arrant thieves as our Jackdaws and Magpies, stealing knives, spoons, thimbles, &c., and hiding them. They abandon all such plantations as have the woods much cleared away from them, of which there have been many instances. They are often seen stooping down and drinking the water that is deposited in the bosom of the leaves of the largest wild pines. When employed in stealing plantains, they are said to be very silent, but at other times are the most loquacious, noisy animals breathing. I have been informed by some very creditable persons, that they will attack and destroy a yellow-snake; their method is to fly upon him one after another, and tearing away a mouthful of his skin and flesh, retreat. This they do with great nimbleness, and with impunity, till they have devoured the poor animal alive." (MSS.)

Once in walking in a very lonely wood, I came suddenly on a Jabbering Crow sitting on a low tree just over my head; the bird was evidently startled, and in the surprise quite lost its *presence of mind*; for instead of making off with the usual clamour, it flew mute to another low tree a few yards off, where it sat peeping at me in silence, until I shot it.

I have never met with the nest; but a young friend, to whom I am indebted for several interesting facts, tells me, that about the beginning of last June, he was accustomed to see a pair on a very lofty cotton-tree, which he thought were nesting. He repeatedly saw them go and "lie down," as he expressed it, in a large bunch of wild-pine, where they would remain for some time; and when one flew out, the other, which had been sitting on the same tree, would go and sit in the place. Usually the bird will leave its position on the slightest alarm, but when either of these was in its hollow, nothing would induce it to fly. He on one occasion fired thrice at the sitting bird, but she would not leave her place, and the situation was too lofty for the shot to reach her. The approach of the birds to the wild-pine was always perfectly silent and cautious; but they would dart out on any other bird flying near, and drive it away with clamour. On the whole, I have no doubt that this pair had a nest in the wild-pine.

The same young friend once witnessed a singular rencontre between two Jabbering Crows, and two Red-tail Buzzards, and in this case it is probable that parental solicitude gave the desperate courage. A single Hawk flying along was pounced upon by a Crow from a neighbouring tree, and a flying fight commenced, the Hawk thrusting forth his talons in endeavour to clutch, in which he once succeeded, and the Crow repeatedly striking his enemy forcibly with his sharp and powerful beak. Now and then each would rise perpendicularly and

pounce down upon the other: this was principally but not solely, the manner of the Buzzard, the Crow usually striking his blow, and then retreating obliquely. After some time a second Hawk approached, which was attacked by another Crow; and now the melée went on in the same manner between the four combatants. The conflict lasted near ten minutes, and at length terminated in favour of the Crows, who fairly drove their opponents off the aerial field, pursuing them with pertinacity to a great distance. At the moment of my writing down this account, it was in a measure confirmed by my actually observing a Jabbering Crow pursuing with insult a Buzzard over the woods: it was strange to see, that after he had returned from the pursuit, he himself was attacked by a little Petchary, to whose superior prowess he was fain to yield, and flee in his turn.

In the latter part of May and early in June, which I presume to be the season of incubation, the singular chattering is almost relinquished for a much more monotonous cawing, somewhat like the note of the Rook, but uttered more pertinaciously, and more *impatiently*.

Robinson states that "they build their nest with slender twigs in the manner of Rooks on the tops of lofty trees, but not more than two nests on one tree. When they have young they will suffer nobody to take them, assaulting the bold invader with great courage and much clamour, fiercely buffeting his face with their wings, at the same time endeavouring to pluck out his eyes with their

strong beaks." He elsewhere states that "they are said to build in hollow trees." (MSS.)

The flesh is not eaten; but having a curiosity to taste it, I had one broiled. The flesh of the breast was well-tasted and juicy, but so dark, tough, and coarse-grained, that I should readily have mistaken it for *beef*.

I found the tracheal muscles of this bird large and globose.

FAM.—STURNIDÆ.—(*The Starlings.*)

TINKLING GRAKLE.*

Tin-tin.—Barbadoes Blackbird.

Quiscalus crassirostris.—SW.

THE appearance, voice, and habits of this bird had pretty well convinced me of its distinctness from *Q. versicolor*, before I was aware that Mr. Swainson had described it in "Two centenaries and a quarter," p. 355. From the length of his specimen, it is probable the tail was not fully developed.

This is one of the first birds which a stranger notices: his conspicuous size and glossy plumage, his familiar business-like manners, and his very peculiar

* Length 12½ inches, expanse 18¼, flexure 6, tail 5$\frac{3}{10}$, rictus 1$\frac{4}{10}$, tarsus 1$\frac{6}{10}$, middle toe 1$\frac{3}{10}$. Intestine 12 inches; two cæca ⅛ inch long, ½ inch from cloaca, Irides cream-white.

metallic cry, at once attract attention. Gregarious, but not associating in very great numbers to feed, they frequent pastures and open grounds in search of insects, not often hopping, (though I have seen one hop,) but walking with a swaggering gait, like rooks and crows. When on the ground their time is chiefly occupied in searching about among the roots of the grass. It is most amusing to stand where one is not observed, at a few yards' distance from a Tinkling at work, and to watch the unremitted industry with which he labours. He marches rapidly to and fro, turning his head in all directions, peeping eagerly hither and thither, now turning one eye to a spot, now the other, ever and anon thrusting into the earth the beak, which is then forcibly opened to loosen the soil. He drags many morsels forth, which he quickly swallows, and searches for more. I suspect earthworms and various larvæ that live at the roots of grass are the objects of his research. Amidst his constant occupation, he does not omit, however, to keep an eye warily on any suspicious object. Only shew your person, and you see the singular-looking white eye turned up towards you; stir a step towards him, and away he flies, uttering his very peculiar cry, his long tail folded on itself, and resembling a vertical fan. As he sits on a tree, he will now and then elevate the fan-like tail, ruffle up the plumage, throw back the head, and with the beak wide open, utter two or three most singular notes, which I can compare to nothing but the sounds produced by repeatedly

striking with force a piece of sonorous metal, relieved occasionally by the creaking of a schoolboy's pencil upon a slate. "There are," observes Mr. Hill, "two or three fine modulations, followed by a sudden break down into the harsh grating sounds of the ungreased wheels of a heavy-loaded truck." It is to the first of these notes that the bird before us owes his local names of Tinkling, Tintin, Clinkling, and, among the Spaniards of St. Domingo, Chinchiling.

Like the Ani, the Tinkling feeds on the parasites of cattle. Walking among them, and mounting on their backs, they pick off the ticks that so sadly infest the poor beasts, who, as if appreciating the service, offer not the slightest molestation to their kind friends. I one day observed a Tinkling thus engaged in feeding her offspring. It was in the picturesque pasture of Peter's Vale, where kine were numerous. Beneath the grateful shade of a spreading mango, in the heat of the day, a cow was peacefully ruminating. At her feet was the old Tinkling, walking round and looking up at her, with an intelligent eye. Presently she espied a tick upon the cow's belly, and leaping up, seized it in her beak. Then marching to her sable offspring, who stood looking on a few yards off, she proceeded to deliver the savoury morsel into the throat of her son, who had gaped to the utmost stretch of his throat in eager expectation, even before his mother was near him. This done, she returned, and again walking round, scrutinized the animal's body, but discovering nothing

more, flew up on the cow's back and commenced an investigation there. Just at this moment something alarmed her, and both mother and son flew to a distant tree. It was at the same time, and in the same pasture, that I observed a number of these birds collected in a large bastard-cedar that overhung a shallow pool; to which one and another were continually descending, and bathing with great apparent enjoyment; after which each flew to a sunny part of the tree, and fluttered and pecked, and ruffled its plumage, that it might dry smoothly and equally.

Mr. Hill has observed at Fort Dauphin, on the north side of St. Domingo, the Tinkling feeding in flocks of two hundred or more. The low grounds around the harbour, consisting of many shallow marly hollows are overflowed by the tide, after the prevalence of strong north winds, reducing them to marshes. Many marine *mollusca*, &c. congregating in these hollows, are left, by the water evaporating, to putrefy: the vicinity is hence very unhealthy, but hither the Tinklings resort in large flocks to feed on the decaying animal matters, with which the mud is filled. And in Jamaica, my friend has witnessed flocks of these birds equally numerous, winging their way, in March, towards Passage Fort, an embouchure subject to a similar inundation, on which they appeared to descend.

The food of our Grakle I believe to consist almost, if not quite exclusively, of insects, worms, &c. Yet I have seen one in March eating a Seville orange on the tree, tugging out large por-

tions of the pulp, and swallowing them. But the stomach of this very specimen, which I shot in the act, was full of comminuted insects. As it was in the midst of very dry weather, the object may have been the quenching of its thirst. Robinson in describing the Corato, (*Agave keratto*) notices a fondness of this bird for its nectar, which may perhaps be similarly explained. He says of this magnificent plant, (MSS. I. 76.) "the flowering stem begins to rise about Christmas, and in the beginning of March, the flowers open. The Mocking-birds are fond of the honey found at the base of this flower; the Barbadoes Blackbirds are also fond of it, and between these birds happen great dissensions and bickerings. If the Blackbirds, which are naturally very loquacious, would fare well, and hold their tongues, they might feed unmolested. But their incessant chattering attracts the attention of the Mock-birds, who having at that time young ones, and being doubly jealous, assault the Blackbirds with great fierceness and vigour, soon obliging them to quit the plant, and hide themselves among the trees and bushes."

Of two which I shot in January, the stomach of one presented a singular appearance, being stuffed with green herbage, like very fine grass, chopped excessively small. I had noticed several caterpillars among the mass, but it was not until I dispersed it in water, that I discovered it to consist of the contents of the caterpillars' stomachs, expressed by the muscular action of the gizzard. There were no less than nineteen caterpillars, all

smooth, and I think grass-eating kinds, some of which still contained portions of comminuted herbage. The stomach of the other contained about as many caterpillars, besides other larvæ, some spiders, a moth, and other insects.

Regularly at nightfall, during the summer, I used to see many parties of Tinklings fly over Bluefields, with the usual vociferation, and wend their way to a spreading cotton-tree near the seaside, where, I was informed, they slept; whence, as regularly one might see them, in the early morning, emerging and dispersing to their places of diurnal occupation. One evening I went down to watch their arrival and proceedings. About half-an-hour before sunset, they began to arrive in straggling parties, but did not proceed at once to their roosting place, but congregated in a clump of smaller trees, about one hundred and fifty yards from it, on the banks of Bluefields River, where they clamoured in all sorts of metallic tones with unceasing vociferation. Some parties from a distance, coming straight to the roost, suddenly altered their course, attracted by the calls of these intermediate settlers, and joined them, and some even returned to them, which had already passed the spot. A few, however, went on to their destination, and when once some were there, their numbers soon increased, for the calling now proceeded from both quarters. As the parties arrived, one or two single birds kept flying from one station to the other, backwards and forwards. At length the whole assembled number on the intermediate station

rose as by common consent, and flew in an immense flock to the number of nearly two hundred, to the roosting place, darkening the air, and making a loud rushing with their united wings. Others went on to arrive, until between four and five hundred, (I could not count very accurately) had assembled. Long before this, however, I had found that the real roosting place was not the large cotton-tree, that this was but another station of congregation, for as the evening advanced, they began to leave this, and to perch on the fronds of four or five cocoa-nut palms that were growing in two lines, of which the cotton-tree was the angle. The nearest trees to this point were first chosen, and few chose the second, till the first was pretty well crowded, nor the third till the second was occupied, and finally the numbers on each cocoa-nut were in proportion to its proximity to the central point.

The taking of places was attended with much squabbling; the alighting of each new comer on a frond, causing it to swing so as greatly to discompose the sitters already in possession, and throw them off their balance; and hence each was received by his fellows with open beaks, and raised wings to prevent his landing. Still, many thrust themselves in among others, pecking right and left in self-defence. The highest horizontal fronds were most in demand, and many of these had at the close as many as ten or twelve birds each, sitting side by side in a sable row. When once the birds had left the cotton-tree, and selected their places on the palms, they did not return, but places were

shifted continually. During the whole time their singular voices were in full cry, and could be heard at a great distance; some idea may be formed of the effect of the whole, by imagining two or three hundred small table bells of varying tones to be rung at the same time. By half-an-hour after sunset, the arrivals had pretty well ceased, and most of the birds were quietly settled for the night. I visited them on one or two subsequent evenings, but found no material difference in their proceedings.

As the Tinkling roosts in society, so does it build. The nests, to the number of twenty or thirty, are placed in a single tree, usually a hog-plum, (*Spondias graveolens*). One of these trees, chosen every year as a nesting tree, being on the property of a friend, a nest, one of fourteen then built, was brought down for my inspection. It consists of a deep, compact, and well-formed cup, the hollow of which is as large as a pint basin; the sides, about an inch and a half thick, formed of flexible stems of weeds, and stalks of guinea grass. It contained three eggs, measuring $1\frac{1}{10}$ inch by $\frac{8}{10}$, of a dull pale blue-green, singularly marked with sinuated lines of black. I am assured that when the company have hatched their broods for the season, they tear away with their feet the nests, and scatter the materials; and that should any other bird have a nest on the same tree, it is mercilessly destroyed with the rest, regardless of the eggs or young which it may contain. The nests are placed on the forks of divergent branches,

near the end of horizontal limbs, at a considerable elevation.

Mr. Hill informs me, on the authority of a friend from Barbadoes, that in that island a strange custom prevails among the children, of collecting these birds about Shrove Tuesday in every year, and bringing them into the towns, where they then play with them, and feed them with cockroaches. The origin or the object of this annual amusement my friend's informant could not explain, having left that island when himself a child. The same gentleman has observed the Tinklings in Jamaica go to the lime trees, and descending beneath the trees pick up in their beaks the fallen fruits; then rising to a twig, each would take its lime in one foot, and gently rub it over its side beneath the wing, transfer it to the other foot, and rub the other side in the same way: the object here being doubtless the fine aromatic odour of the oil of the bruised rind communicated to the feathers. The observer has watched this proceeding by the hour together.

BANANA-BIRD.*

Icterus leucopteryx.

Oriolus icterus,	LINN.
Oriolus Mexicanus,	LEACH.—Zool. Misc. i. pl. 2.
Icterus leucopteryx,	WAGL.

THIS pretty bird is a general favourite; social and confiding in his manners, without being saucy, he frequents the fruit trees which are invariably planted around a Jamaican homestead. On an elevated twig he sits and cheers his mate with his clear, melodious song, which he trills forth with much energy. Sometimes his notes have considerable variety, and may properly be called a song; at others he whistles a quick repetition of two clear notes which much resemble the words *Tom Paine, Tom Paine,* if we attempt to enunciate them in whistling. Again, it is a single note quickly repeated, as when we whistle to call a dog. Besides these, the Banana bird has other sounds, which are very deceiving, and seem the result of imitation.

Fruit is his principal diet; a ripe banana, or orange, a papaw, or a bunch of pimento, presents temptations to him; but perhaps still more ac-

* Length 8½ inches, expanse 13, flexure 4$\frac{3}{10}$, tail 3½, rictus 1, tarsus 1, middle toe $\frac{8}{10}$. Intestine 9 inches; two cæca, minute, ⅛ inch long. Irides dark hazel.

ceptable are the various species of *Anona*, the sops and custard-apples, on whose soft and luscious pulp he delights to regale. A ripe sour-sop is sure to attract him, in common with the Blue Quits, with which he mingles. If the part exposed be decomposing, as is often the case, he may be seen tugging vigorously to pull off portions of this, which he throws from his beak with a jerk, seeking to arrive at a part more palatable. When thus engaged in feeding, and particularly when playfully pursuing the hen among the twigs, his bright yellow coat glows beautifully through the openings of the green leaves.

I have observed so frequently as to be worthy of notice, that when shot, the Banana bird grasps the twig on which he was sitting, so tenaciously as to hang from it, body downwards, until death at length relaxes the clasp.

The nest of this bird is an interesting structure; like that of the Baltimore of the Northern continent, it is a deep purse suspended from two parallel twigs, or from a fork. One before me is composed chiefly of the wiry fibres plucked from the fronds of the Palmetto-thatch, with some horse-hair interwoven. Sometimes, where thatch-threads are scarce, horse-hair alone is used, and the structure is particularly neat. But the more ordinary material is a vegetable substance, so closely resembling horse-hair, even on a minute inspection, that I have had difficulty in persuading intelligent persons that it was not actual hair, till I applied it to the flame of a candle, when it burnt without

shrivelling. But I am very uncertain what the substance is; some say it is the *Tillandsia usneoides* or "Old man's beard," a very common tree-parasite, but it assuredly is not this; I have suspected it to be the fibrous stem of the Dodder, dried; a nest newly made, I observed to be of the bright buff hue of that plant, whence I presumed that the stems are sometimes taken in a recent, and even a growing state. A friend tells me, that he has, with much gratification, watched the process of building. The hairs or threads are procured one by one, and carried to the selected spot, where they are deposited in a loose heap. From this accumulated mass of material, the work is carried on, and progresses rapidly, when once begun. When a few threads are laid and interlaced for the base, the work becomes perceptible and interesting. Both birds work together; one taking a thread, and weaving-in one end, holds down the loose part with his beak; while his mate takes the ends of others projecting, and lays them tightly down over it, interweaving them with others. Other threads are crossed in the same manner, in every direction, until a slight but very compact purse is made, resembling a loose cloth. As it hangs, the texture is so thin, that a person below can discern the eggs or young within. Four eggs are laid, pointed at the less end: they are white, marked with a few angular scratches, and large spots of deep brown, and measure 1 inch by $\frac{7}{10}$. If an intruder attempt to rifle the nest when the young are there, both old birds fly round in

excessive perturbation, and cry *Tom Paine's pick-a-ninny*, with vociferous shrillness.

In March I have dissected females, which displayed a brilliance of plumage, *in no wise* inferior to that of the male.

I presume this to be the *Watchy-picket* of Sloane.

Mr. Hill has mentioned to me two other species of *Icterus*, both black, the one larger, the other smaller, which have been found in the mountains near Kingston. I think I once saw the former in Mount Edgecumbe.

BUTTER-BIRD.*

Ortolan.—October Pink.—Ricebird.

Dolichonyx oryzivorus.

Emberiza oryzivora,	LINN.—Aud. pl. 54.
Icterus agripennis,	BONAP.
Dolichonyx oryzivorus,	SW.

IN ordinary seasons this well-known bird arrives in vast numbers from the United States, in the month of October, and scattering over the lowland plains, and slopes of the sea-side hills, assembles in the guinea-grass fields, in flocks amounting to five hundred or more. The seed is then ripe, and the black throngs settle down upon it, so densely, that

* Length $7\frac{1}{2}$; expanse $11\frac{1}{2}$, flexure $3\frac{9}{10}$, tail $2\frac{1}{2}$, rictus $\frac{6}{10}$, tarsus $1\frac{1}{10}$, middle toe 1.

numbers may be killed at a random discharge. To procure the seed, the birds perch on the culm, but as the weight would bear down a single stalk, each grasps several culms in its foot, while it rifles the panicles. At this time, the males are dressed in the sober livery of the females. Early in November they depart for the southern continent, but during their brief stay they are in great request for the table. Dr. Chamberlayne only echoes the general estimation, when he says:—"The Butter-bird is a bonne bouche; it is but a mouthful, but a luscious and delightful one. Their note," he adds, "during their migration hither, is simply *ping, ping, ping*:—what it may be in its native woods, I do not know. But wounded birds have been secured and kept in cages, and when placed in the same room with a Canary have soon acquired similar notes, and in time warble with equal strength and melody." (Jam. Alm. 1840; p. 25.)

When the spring rains have set in, usually in the month of April, they again become our transient guests for a few days, on their northward migration, when the males are conspicuous in their nuptial dress. Other species of grass are now seeding, and the nutritive farinaceous grains of many neglected weeds afford them a supply during their brief sojourn.

FAM.—FRINGILLADÆ.—(*The Finches.*)

CASHEW-BIRD.*

Mountain Bulfinch (ROB.)—*Orange-bird.*

Tanagra Zena.

Fringilla Zena,	LINN.
Fringilla Bahamensis,	BRISS.
Tanagra multicolor,	VIEILL.
Spindalis bilineatus,	JARD. and SELB.—Ill. Orn. n.s. pl. 9.

THOUGH not very numerous, this beautiful bird is well-known, being conspicuous from his brilliant colours. He is spread over the country, from the mountains of the interior, to the plains of the coast. Rather social, though perhaps attracted by a common cause, the abundance of food;—we may sometimes see a dozen or more scattered over a large bully-tree, from the twigs of which they hang in all positions, while they pick the berries. Its flight is rapid, and performed in long undulations: during flight, a low sibilant note is uttered; but it is usually a silent bird.

About Spanish Town, it is called the Orange-bird, not from its feeding on oranges, but from the resemblance of its plump and glowing breast, to that

* Length 7⅞ inches, expanse 13, flexure 3$\frac{9}{10}$, tail 3¼, rictus $\frac{13}{20}$, tarsus 1, middle toe ¾. Intestinal canal, wide, but only 7 inches long: no cæca. Stomach, a thin, almost membranous sac.

beautiful fruit, as it sits among the dark green foliage. It is also called the Goldfinch.

I shot a male in September, and wounding him only in the breast, picked him up, more frightened than hurt. I carried him home in my handkerchief, and put him into a large cage, where he soon became quite a favourite. From the very first he was fearless and lively, found the use of the perches immediately, and did not flutter or beat himself against the sides, though persons stood close to the cage. This was large enough to allow him a short flight; and as there were several perches inserted at various heights and distances into the sides, he spent a great deal of his time in leaping from one to the other, seeming to enjoy it much. Seeing this, I put in one or two more, which were no sooner ready than he took notice of them, stretching himself towards them, cautiously at first, as if doubtful whether they would bear him; soon, however, he ventured boldly, and then took them regularly in his course. He always slept on the highest perch, with his head behind his wing. He was in full plumage, and his gay breast, and the fine contrasts of his striped head and wings, showed him off to advantage. I knew nothing that he would eat, save the berries of the bully-tree, none of which grew within a considerable distance. I first tried him with a few insects, and small earthworms, but he took no notice of these: then I gathered a few bunches of fiddle-wood berries, which I had no sooner stuck into his cage than I was pleased to see him hop towards them, and pick off the ripe ones

with much relish and discrimination. I was informed that in a wild state, he sometimes eats the sour-sop; as I had none of this fruit at hand, I gave him pieces of a ripe custard-apple and of a guava. He immediately began to eat of each, plucking off portions of the pulp, and also taking up the fleshy ovaria of which the former is composed, which he chewed with his beak till the enclosed seed was pressed out. But all these were forsaken so soon as I presented to him bunches of ripe pimento, black and sweet. These he picked off greedily, masticating each in the beak, until the seeds, which I suppose, were too hotly aromatic for his taste, fell out. It was amusing to see the persevering efforts he made to obtain those berries, which happened to be a little beyond his reach. He would jump from perch to perch impatiently, gazing with outstretched neck at the tempting fruit, then jump, and look again; then reach forward to them, until in the endeavour, he would overbalance himself, and perform an involuntary somerset. Nothing daunted, however, he persevered until he ventured to do, what he had been several times on tiptoe to do, leap on the bunch itself; and this he continued to do, though with some failures, holding on in a scrambling way, now by a leaf, now by the berries themselves, until he had rifled the bunch of the ripest.

After I had kept him about a week, during which his liveliness and good temper had much attached him to me, though he made not the slightest effort at song, I took him out to cleanse the feathers of his breast from the dried blood that had flowed from

his wound. I gently rubbed them with a soft wet sponge, but whether he took cold, or whether I irritated the wound, I know not; but on being returned to the cage, he instantly began to breathe asthmatically with open beak, apparently with pain; interrupted now and then by fits of coughing, which continued all night, and on the next morning he died. On dissection, I could not find that the shot had penetrated the chest, but they were imbedded in the muscles of the forearm, and had broken the scapula.

A nest, reported to be of the Cashew bird, was brought me on the 18th of June, taken from a pimento tree. It was a thick, circular mat, slightly concave, of a loose but soft texture, principally composed of cotton, decayed leaves, epidermis of weeds, slender stalks, and tendrils of passion-flower, intermingled, but scarcely interwoven. I think it probable that this had been sustained by a firmer framework; and that the person who took it merely tore out the soft lining as a bed on which the eggs might be carried. The child who brought it, could give no account of this. The eggs were two, long-oval, taper at the smaller end; $1\frac{1}{10}$ inch by nearly $\frac{8}{10}$; white, sparingly dashed with irregular dusky spots, in a rude ring around the larger end. The embryo was at this time formed.

SCARLET TANAGER.

Pyranga rubra.

Tanagra rubra, LINN.—Aud. pl. 354.
Pyranga rubra, VIEILL.

OF this gay-plumaged stranger, a male and female were seen in March of the present year, in that wild and magnificent gorge, called the Bocaguas, near Spanish Town. The brilliant appearance of the male, attracted the admiration of passers by, and he was at length shot, and brought to Mr. Hill.

About three weeks after this, a male, also in summer dress, occurred to my own observation, hopping about the small fruit-trees, on the banks of Bluefields River. He was very fearless, allowing me to sit and watch him within half-pistol-shot; now and then he flew down to the ground, by the side of the water, and remained a few moments peeping about; then he would fly up into a shrub, and presently be down again to drink; for the season was parched with drought. I watched him full half an hour, before he flew away.

Both these instances show that the Scarlet Tanager, occasionally at least, takes our lovely island, in his spring migration from Central America to the north. He certainly does not winter with us, having been until this season unknown to Mr. Hill, who for many years has paid close attention to the migrant

birds. Yet D'Orbigny states, that it winters in Cuba; perhaps, however, but casually.

RED-THROATED BLUE TANAGER.*

Orange-quit.

Feather-tongue or Sour-sop bird.—(ROB. MSS.)

Tanagrella ruficollis.

Fringilla Martinicensis,	GMEL.
Tanagra ruficollis.	ibid.
Fringilla noctis, var. β.	LATH.—Ind. Or.
? *American Hedge-sparrow, fem.*	EDW. 122.
? *Le pere noir,*	BUFF. Pl. enl. 201. fig. 1.

THE tongue of this species, pencilled and barbed at the tip, might give it a place among the Honey-suckers. It does not climb, however, nor cling by its feet, but perches. It is not a very common bird in the lowlands; but in the mountains I have found it rather plentiful. It frequents berry-bearing trees of various species, in small parties, with no very strong sociality; its only note is a single

* Length $5\frac{1}{8}$ inches, expanse 9, flexure $2\frac{8}{10}$, tail 2, rictus $\frac{11}{20}$, tarsus $\frac{3}{4}$, middle toe $\frac{6}{10}$. Weight $3\frac{1}{2}$ drachms, (apoth.)

Male. Irides bright hazel; beak and feet black. General plumage rather dull blue; throat deep rufous, cheeks black. Wing-quills and tail-feathers blackish with blue edges.

Female. Head and neck greenish grey: back olive brown: tertiaries and their coverts, and tail dark umber; the former with pale edges. Under parts ashy, approaching to white on the medial line of the belly.

chirp, sharp and shrill. Towards the end of the year, when the dark and glossy foliage of the orange groves is relieved by the profuse golden fruit, reminding the beholder, of the fabled gardens of the Hesperides, this Tanager becomes numerous, hopping about the twigs, and pecking holes in the ripe fruit. Many are then readily caught by smearing the twigs in the vicinity of a half-eaten orange, with bird lime, or "gum," as it is called, the inspissated milk that exudes from an unripe naseberry. Females seem to predominate in these foraging parties, in the proportion of two or three to one; unless the young males have the same livery as their mothers.

Near the Hallow-well at Content, on a bush whose glossy black berries have obtained for it the name of *wild pimento*, but which is better known as *rod-wood*, we found a nest of the Orange Quit, in June. It was a very deep cup, of a coarse texture, rather rudely formed of blades of grass, and the leaves of *Olyra latifolia*, interwoven with stalks of grass. It was built on a horizontal branch, at the divergence of two twigs, but did not embrace them. Four small eggs, $\frac{13}{20}$ inch by $\frac{5}{10}$, contained at that time embryos half matured: they were white, splashed with dull red, thinly, except at the larger end, where the spots were numerous and confluent. The male probably assists in incubation; for he was seen to emerge from the nest.

BLUE QUIT.*

Euphonia Jamaica.

Fringilla Jamaica,	LINN.
Euphonia Jamaica,	DESM.
Grey Grosbeak,	BROWN.—Ill. Zool. pl. 26.

A SHORT stumpy bird, and rather inelegant from the shortness of its tail, the Blue Quit reminds me of the Nut-hatches. It is very common about homesteads, where it frequents fruit-trees, particularly the sops: it is, however, nowise infrequent in the woods, both on the mountains and in the lowlands. It hops busily about the twigs and fruits, picking in any position, back or belly, head or tail, uppermost. When the sour-sop is ripe, they flock to it in such numbers, that the tree appears covered with them: the negro children then set limed twigs for them, and I have had them brought to me thus as fast as they could be taken down. The boys cut diagonal notches into the bark of a naseberry tree, (*Achras*), or score an unripe fruit; a white milk exudes, so abundant as to drop quickly, and is caught

* Length 4½ inches, expanse 8, flexure 2$\frac{8}{10}$, tail 1$\frac{6}{10}$, rictus $\frac{6}{10}$, tarsus, ¾, middle toe $\frac{11}{20}$. Irides deep hazel: feet dark grey; beak grey, the fissure, ridge and tip black.

Male. Upper parts slate blue, glossy, more or less tinged on the rump with green. Throat, breast, and sides pale grey: belly yellow; under tail coverts greyish white. The blue on the wing-quills nearly black.

Female. Loins, upper tail-coverts, and thighs, yellow-green; no yellow on the belly. Otherwise as the male.

on a leaf. At first it has the consistence of thin cream, but half an hour's exposure thickens it, and gives it tenacity enough to be drawn into threads; when they consider it "ripe." A twig smeared with this "gum," is stuck into the half-eaten sour-sop or custard-apple, presenting a very inviting perch to the hungry birds. One soon hops on the fatal twig, and is in an instant fluttering helplessly, fast at the feet. Banana birds, Mocking birds, and Cashew birds are also taken in this way. The appearance of the intestinal viscera at such a season, is very singular, being distended with the white pulp throughout their length, perfectly visible from the transparency of the intestines. At first the stomach seems to be wanting, and this much surprised me; but the fact is, that organ is simply a thin membranous sac, or rather canal, differing in no apparent respect from the intestine, save in slightly increased capacity.

The musical powers of our little Blue Quit are considerable: it is a sweet and constant song-bird. It has various notes; frequently it chirps pertinaciously, like the Humming birds; at other times it utters a long "twee," like the Chicken-Hawk; sometimes it delights in a soft warbling repetition of a single note; sometimes its voice is closely like the plaintive mewing of a kitten. But besides these it has a real song, sweet and musical. In March at Spanish Town, I heard two, apparently both males, warbling close together on a genip-tree opposite my window, very sweetly but hurriedly. When one flew to another twig the other presently

followed. By and bye they ceased that melody, and one took to a strain consisting of about a dozen rapid repetitions of the same note, ending with one elevated note, with a jerking abruptness. This strain he repeated several times.

About the middle of April, a pair of Blue Quits built a nest on one of the topmost branches of a high fiddlewood in the yard of Bluefields house. The tree was much infested with that parasite called Old man's beard, large bunches of which grew on most of the limbs and boughs, so numerously as to touch each other in long successions. Two of these contiguous bunches the birds had managed to separate, either by picking away portions, or by pushing them apart, so as to open a large hollow, and in this they built a very snug domed nest. It was globular in form, about as large as an infant's head, with an opening in one side, composed of dry grass, the dried stems of the *Tillandsia*, tendrils of passion-flower, bits of rag, profusely intermixed with cotton and the down of plants; yet these soft substances were not used to line the structure, the grass only appearing in the inside. Perhaps it was not finished, for the birds were passing in and out, and thus betrayed its existence, for so identified was it in appearance with the bunches around, that but for this ingress and egress, and the little opening, I could not have detected it. I sent up a lad to examine it, but in so doing, he partially broke the branch, causing it to hang down; and this I presume awakened suspicion, for the birds deserted it, and in a few days I had it taken down. It was empty.

Mr. Hill has favoured me with the following interesting memorandum. "Feb. 5. 1838. Near the piazza of my house a cotton-bush has flung out its knots of white filaments. Hither come the birds at this season to gather materials for constructing their nests. The Blue Sparrow, a pretty little frugivorous bird that sings in our fruit trees, all the year round, its merry twittering song, has been busily engaged with his mate collecting bills-full of cotton. It did not seem to be a thing immediately settled that they should set to work and gather their materials at once. They had alighted on the tree as if they had very unexpectedly found what they were seeking. The male began to twitter a song of joy, dancing and jumping about, and the female, intermingling every now and then a chirp, frisked from stem to stem, and did very little more than survey the riches of the tree: at least she plucked now and then a bill-full of the filaments, and spreading it to flaunt to the wind tossed it away, as if she had been merely shewing that it every way answered the purpose in length and softness, and was in every respect the thing they wanted. At each of these displays of the kind and quality of the materials, the male intermingled his twittering song with a hoarse succession of notes, which were always the same, *chu, chu, chu, chu, chwit*; to which the female chirped two or three times in succession; then grasping another bill-full of cotton, tossed it away as before, and obtained from the male the same notes of attention and approval. At last they set to work in earnest, gathered a load of the ma-

terials drawn out as loosely as they could get it, and filling their bills, started away to the tree, wherever it was, in which they had determined to build their nest."

TICHICRO.*

Grass Pink, or Savanna bird.—ROB.

Coturniculus tixicrus.—MIHI.

INTERMEDIATE between *C. Henslowi* and *C. passerinus*, the Tichicro differs from the former in its unspotted breast, its nearly even tail, the secondaries considerably short of the primaries, the bill arched, the deep colour of the head and the coronal streak. From the latter, by the tail feathers being acute, by the third and fourth quills being longest, and by having more chestnut on the wings. In the admeasurements it differs from both.

This modest little bird is not common, except in

* Length 5 inches, expanse $7\frac{3}{4}$, flexure $2\frac{2}{10}$, tail $1\frac{6}{10}$, rictus $\frac{5}{10}$, tarsus $\frac{9}{10}$, middle toe $\frac{7}{10}$, hind toe $\frac{13}{20}$, (including claw $\frac{6}{20}$). Irides hazel; feet flesh-colour, beak greyish, culmen deep brown. Crown deep bistre, with a central white stripe reaching to the nape. Feathers of back, rump, wing and tail coverts, with black disks, chestnut tips, and narrow white edges. Quills dusky, with the outer edge whitish, third and fourth longest; secondaries reaching to within $\frac{7}{20}$ inch of primaries: edge of shoulder brilliant yellow. Tail feathers narrow, acute, nearly even, brown, with the medial portion black. A yellow band over the eye. Under parts white, tinged with umber on throat, breast, and sides, but unspotted.

certain localities; it is sometimes seen in open pastures, running on the ground, but more frequently in fields of guinea-grass. In a grass-piece at Peter's Vale, it may be found at all times of the year, frequently rising from behind a tussock just before the traveller's feet, flying a little way with feeble wing, and then sinking among the high grass, where it will remain, until one again come close to it, for it seems little inclined to flight. I have several times seen a single one by the sides of the road to Savanna-le-Mar, where it passes through the marshy flats of Paradise; and occasionally one frequents the pasture of Bluefields. I have never observed it on a tree, nor even on a bush, except on one occasion, early in March, when one was sitting on the log-wood fence at Paradise, warbling sweetly, and fearlessly continuing its song, though myself and two other persons stood looking at it within two or three yards. More frequently it utters its warbling chant sitting on a flat stone, or on the bare ground among the grass tufts. Its song is melodious, but simple; consisting of a few notes rapidly repeated in a single strain, *pettichee, pettichee, pettichee,* when it is silent for a moment, and begins again. This, as far as I am aware, is peculiar to the vernal season; at other times it has a singular call, as it skulks in its grassy coverts, *cro-cro-tichicro,* whence its provincial name.

I have been able to learn nothing of the nidification of this Sparrow; its small size, sombre plumage, and retiring habits have prevented its obtaining much notoriety; indeed it was unknown to Mr.

Hill, until I happened to shoot one when in company with him at St. Thomas in the Vale. I suspect it makes its nest in the midst of a grass tuft, or on the ground among them; where it would be very unlikely to be met with, as these tufts are never cut, nor are they eaten down by stock to within eighteen inches of the ground.

One day in April, when the sun was pouring down his unmitigated rays, I observed a Tichicro walking towards a little rain-puddle in the middle of the road. Seeing me, however, it retired to the wayside, and did not fly away, though within a few feet of my horse, but stood looking wistfully at the puddle. I thought it had been going to drink, but as it began to ruffle its plumage and shake its wings, I saw that it had been bathing. I then rode on a few steps, leaving the pool clear, when it immediately ran to the edge, and walked into the shallow water, bending its legs and sitting down in it; then it immersed its head, and shook the water over its body, with the pretty action common to birds bathing. It seemed greatly to enjoy the relief from the heat, and only reluctantly left the water on the approach of another passenger.

The Tichicro is certainly a perennial inhabitant of the island, and seems confined to the lowland districts, or to hills of moderate elevation.

GOLDEN-CROWNED CANARY.*

Crithagra Brasiliensis.

Fringilla Brasiliensis, SPIX.—Av. Bras. pl. 61.

THIS very beautiful Finch is rather common in the large park-like pastures of Mount Edgecumbe, Auchindown, Culloden, and Peter's Vale, situated at the eastern extremity of Westmoreland. It is not at all shy, but hops about the grass, or flits to and fro among the pimento and orange trees, in parties of three or four, now and then sitting among the branches, and uttering a monotonous *chip, chip,* pertinaciously repeated by both sexes without variation. This is the only note I have heard from them.

These birds are believed in Jamaica to be the descendants of some pairs of the common Canary turned out. "A gentleman of the colony named Shakspeare," observes Mr. Hill, "many years ago, touching at Madeira on his voyage to this island,

* Length 5 inches, expanse 10, flexure $2\frac{9}{10}$, tail $2\frac{2}{10}$, rictus $\frac{5}{10}$, tarsus $\frac{17}{20}$, middle toe $\frac{7}{10}$. Irides dark hazel; feet horn-coloured; beak, upper mandible blackish, under pale horny. Male. Plumage above olive yellow; head lustrous orange, silky; whole under parts rich golden yellow. Wing and tail feathers dusky brown, with both edges broadly yellow.

Female. Head and back yellowish grey, with black dashes: throat whitish; a broad collar of pale yellow encircles the neck; breast and belly greyish-white. In other respects as the male, but less vivid. Some males, (young?) have the upper plumage mingled with greyish ash, and the orange only on forehead and throat.

is said to have procured several male and female Canaries, which he set at large in the fields about the rectory at Black River, where they have multiplied, and have become wild birds of the country. Many of our grasses produce farinaceous seeds, extremely nutritious, and supply quite a substitute for the canary-seed of the African islands. I presume our birds derive their intensity of colour from this sort of food. They are a beautiful variety of the natural stock. Of their song I have never been able to learn anything very distinct, except that heard in the thickets with other birds, it sounds neither loud nor thrilling, and can barely be recognised as that of the bird of the aviary. It is said to have lost all its versatility with its power. Though these imported Canaries have increased so much, as to be perceptibly common, they are confined to a very small range of country, being observed nowhere but in the neighbourhood of the place where the first colony was established. A friend writes me, between Bluefields and Black River."

The evidence of the origin of these birds, seems thus very distinct; and yet the plumage is that never known to be assumed by the true Canary, while it agrees exactly with the Brazilian species, which, Spix says, "inhabits the fields of Minas Geraes, and is named Canary." The plumage of the wild Canary, in its native islands, is said to be *less vivid* than that of caged specimens. It is possible that the Brazilian birds may have descended from imported birds; or, on the other hand, that

the Madeira parents of ours may have been imported from Brazil thither; a case the more probable, from the fact of both being Portuguese colonies.

YELLOW-BACK FINCH.*

Spermophila anoxantha.—MIHI.

THOUGH hitherto undescribed, this pretty species is not rare: among the dark green pimento groves of Mount Edgecumbe, it may be almost always met with, and the contrast of its black head and yellow back, renders it conspicuous. Various seeds and small berries afford it food; in April I have seen it eagerly picking off the little crimson berries of the fiddlewood, and swallowing them; and in autumn I have shot one engaged in feeding on the seeds of the prickly-yellow tree. Probably grass-seed forms a part of its nutriment; late in the year when the guinea-grass is ripe, I have observed them flitting about from tussock to tussock.

Its musical powers are but small. I have never

* Length $4\frac{7}{8}$ inches, expanse $8\frac{1}{4}$, flexure $2\frac{8}{10}$, tail $1\frac{9}{10}$, rictus $\frac{4}{10}$, tarsus $\frac{8}{10}$, middle toe $\frac{6}{10}$. Irides hazel; feet blackish flesh-colour; beak black.

Male. Head and breast black. Back yellow, becoming greenish towards the rump, and merging into black on the tail. Wing-coverts yel low, brightest at shoulder; quills, and tail feathers edged with yellow. Belly greyish; under tail-coverts brick-red.

Female. Upper parts olive yellow, bright on shoulders, dull on head and rump. Under parts ashy grey.

Latham (Syn. ii. 300) confounds this with the Black-face Grass-quit.

heard any note proceed from it, but *tsip, tsip, tseep, tseëp*, loud and shrill, repeated at short intervals, as it hops from twig to twig.

Early in June I found a nest of the Yellow-back. Over a gap leading out of a negro yard into the high road, at the back of Content cottage, hung down a dead limb of a large logwood, that was almost covered by bunches of *Tillandsia usneoides*. Just at the extremity of the depending twigs, not more than five feet from the ground, and in the very path frequented by the people and the animals, in the midst of a large cluster of the *tillandsiæ*, the Finch had constructed her nest. It was a neat dome, somewhat like the head-part of a cradle, formed of dried grass, with a few bits of white cotton interwoven, but profusely set on the outside with the *tillandsia*, the down of which gave it a very woolly appearance. It contained three eggs, white, splashed with dull red, having a tendency to form a crown round the large end. On this, as well as another occasion, the male was seen to enter the nest, as well as his mate, so that both probably assist in incubation. In the evening I went cautiously to the spot, and putting a gauze net suddenly before the nest, secured the female, which darted out into the net. Having identified her, I let her go, but in the morning, early, when I went again to the nest, there were no eggs within, but fragments of the shell of one lay on the ground at some little distance, which must have lain there sometime, for they were cleaned out by ants, and dry inside. Was this done by the female at find-

ing the nest desecrated? or by the male, at not finding his mate? for on letting the bird go in the darkness, she in her fright flew in the opposite direction, and perhaps did not find the nest.

YELLOW FACE GRASS-QUIT.*

Spermophila olivacea.

Emberiza olivacea,	LINN.
Fringilla lepida,	Ibid.
Passerina olivacea,	VIEILL.
Spermophila olivacea,	SW.

IMMEDIATELY behind the homestead of Bluefields, a lane, confined for a mile or two between dry-stone walls, leads to the road which winds in a zig-zag line to the top of the Bluefields ridge. This lane possesses many attractions. By the wall on each side grow trees, which afford grateful shade, and many of them load the evening air with dewy fragrance. Orange-trees, profusely planted, give out in spring gushes of odour from their waxen blossoms, and in autumn tempt the eye

* Length $4\frac{1}{8}$ inches, expanse $6\frac{3}{4}$, flexure 2, tail $1\frac{7}{10}$, rictus $\frac{7}{20}$, tarsus $\frac{7}{10}$, middle toe $\frac{6}{10}$. Irides dark hazel; feet purplish; beak horny black.

Male. Upper parts olive; a stripe over the eye, a minute one under the eye, and the chin and throat, rich yellow, narrowly edged with black; lower throat and breast black, merging into the olive; belly very pale olive; vent and under tail coverts almost white. Wing-quills blackish, edged with olive; edge of shoulder yellow. Tail olive.

In the female the black is absent, and the yellow is less conspicuous.

with their "golden fruitage." The Pride of China, lovely in its graceful leaves and spikes of lilac blossoms, and not less sweet-scented than the orange; the pimento, dense and glossy, with another, but not inferior, character of beauty; are varied by the less showy, but still valuable, cedar and guazuma. The various species of *echites* trail their slender stems and open their brilliant flowers, along the top of the wall, and the pretty *Banisteria* displays its singular yellow blossoms, or scarlet berries at its foot; while near the top of the lane, tangled and matted masses of the *night-blowing cereus* depend from the trees, or sprawl over the walls, expanding their magnificent, sun-like flowers, only to "the noon of night." Here and there huge black nests of *termites* look like barrels built into the wall, whose loose stones, grey with exposure, and discoloured with many-tinted lichens, afford a sombre relief to the numerous large-leafed *arums* that climb and cluster above them. To the left the mountain towers, dark and frowning; the view on the right is bounded by a row of little rounded hills, studded with trees and clumps of pimento. But between the traveller and either, extend the fields of guinea-grass, which are enclosed by these boundary walls. In the autumn, when the grass is grown tall, and the panicles of seed waving in the wind give it a hoary surface, the little Grass-quits, both of this and the following species, throng hither in numerous flocks, and perching in rows on the slender stalks, weigh them down, while they rifle them of the farinaceous seeds.

In March, I have found the stomach of the Yellow-face full of seeds of the common pasture grasses; and I have been struck with the enormous dilatation of the membranous craw, which, as in the Gallinaceæ, occupies the hollow of the *furcula*.

D'Orbigny, who has given a good figure of it, in Sagra's Cuba, alludes to its prevalence in all the great Antilles. At the Havanna, he says it is frequently caged, being very docile, and readily learning to sing. I have never heard from it any other note than a quivering chirrup as it flits from bush to bush.

Mr. Hill has favoured me with the following note. "Nests of the Grass-bird are frequently brought to me, but without distinguishing between the yellow and the black-throated species. A nest in the garden, built in a *Nerium oleander*, by the latter, [in July,] enables me to set down a remark or two. I see no difference in the structure of the nests of the two species. They are both domed nests, made of pliable dry grass, and lined with horse-hair. This nest is built between the forks of the long vertical stems of the *oleander*, or South Sea rose. Three other vertical stems press it close, and the leaves quite canopy it over. The substratum of the nest, on which it may be said to be bedded, is a mass of long linen rags, wound in and round the forked branch. It is quite true that the Grass-bird very frequently selects a shrub, on which the wasps have built, fixing the entrance close to their cells. I saw a nest in this secure situation a few years ago; it was pointed out to me as illustrating a habit of the yellow-throated species.

"The Grass-birds remind me much of the European Sparrow. They are very social, have a strong predilection for the house-garden, and when feeding by half-dozens and dozens together, are very noisy. They have a peculiar shrill chirp; and in the season when the grasses are in seed, their diminutive bodies, for they are smaller than wrens, may be seen weighing down the culm of the grass, everywhere about.

"On one occasion, some twenty or thirty of the Yellow-throated Grass-bird constructed a mass of nests, within the wide crutch of a baobab tree, and lived in common."

BLACK-FACE GRASS-QUIT.*

Spermophila bicolor.

Fringilla bicolor,	LINN.
Chloris Bahamensis,	BRISS.

BOTH of these birds are permanent inhabitants of Jamaica; their habits are so similar, that the detailed history of one will apply to the other. Both are quite common, and familiar; and both are unmusical: the present is more silent than the former; yet in spring its note may be heard, as

* Length 4¼ inches, expanse 6½, flexure 2, tail 1$\frac{6}{10}$, rictus $\frac{4}{10}$, tarsus $\frac{7}{10}$, middle toe $\frac{6}{10}$. Exactly like the preceding, except in totally wanting the yellow; the face and throat being black.

it makes its short flights, a single harsh guttural squeak, difficult to indicate by words, and difficult to imitate.

To the remarks of Mr. Hill's in the preceding article, I will merely add the description of another nest of the Black-face, which in June was built between three contiguous stalks of maize, and an ear. It was a dome composed of slender stalks of grass and weeds woven into a globose form, flattened in front, on which side was the opening. The dried beard of the corn entered into the structure, and a small frond of fern, and a tendril or two of passion-flower adorned the entrance. Three eggs were laid, measuring $\frac{7}{10}$ by $\frac{1}{2}$ inch; pointed; white, splashed with dull red, chiefly at the larger end, where confluent.

BAY-SIDED GRASS-QUIT.*

Spermophila adoxa.—MIHI.

Of this very plain and unpretending species, but a single specimen has fallen into my hands; which I shot on the 9th of August 1845, hopping with others about logwood trees at Grand Vale. It may be a female of an unrecorded species, but its

* Length $4\frac{1}{4}$ inches, expanse $6\frac{1}{2}$, flexure 2, tail $1\frac{6}{10}$, (nearly,) rictus $\frac{7}{20}$, tarsus $\frac{7}{10}$, middle toe $\frac{7}{10}$. Irides dark brown, feet purplish, beak horn-colour, nearly black above. Whole upper parts, olive brown: under parts greyish white: sides and vent fawn-colour.

fawn-coloured sides distinguish it from the females of the preceding two species, with which in other respects it well agrees, as they do still more with each other.

The name of *Quit* is applied without much discrimination by the negroes of Jamaica, to several small birds, such as the Banana Quit, which is a Creeper, and the Blue Quit, and Grass Quits which are finches; it is probably an African designation.

COTTON-TREE SPARROW.*

Black Bulfinch, ROB.——*Coffee-bird.*

Pyrrhula violacea.

Loxia violacea, LINN.—Edw. Birds, pl. 82. female?
Pyrrhula auranticollis, VIEILL. Gal. Ois. pl. 55. male.

ONE of those gigantic and hoary cotton trees which are the pride of a Jamaican forest, or some other tree equally tall, is usually selected by this Bulfinch, for its abode. At the extremity of an immense horizontal limb, it builds a nest of rude materials, as large as a half-bushel measure, the

* Length 7¾ inches, expanse 10½, flexure 3 $\frac{1}{10}$, tail 3, rictus $\frac{6}{10}$, tarsus $\frac{9}{10}$; middle toe ¾. Irides dark hazel; beak and feet black. Male. Plumage black; an arched stripe over the eye, the chin, throat, and under tail-coverts rust-red: under wing-coverts yellowish white. Female. Dull mouse-brown; paler beneath. The red paler and less in extent.

opening being near the bottom. I have seen the bird enter this monstrous structure, but have had no opportunity of examining it. Dr. Robinson observes that "the Black Bulfinch builds a nest as big as a Blackbird's cage, and by the artful contrivance of this little volatile, the whole has the simple appearance of a heap of trash, flung on some bough of a tree, as it were by accident, so that nobody would suppose it to be anything else." And in another passage he records having found the nest at Negril, on the 22nd of April, 1761, at the summit of a Cabbage-palm, eighty-one feet high, which he had caused to be felled: "Among the spadices of this tree was fixed, how I cannot tell, the nest of the Black Bulfinch, made up of various matter; viz. old cane-trash fibres, silk-cotton, some dry leaves, and at the bottom many tendrils of climbing shrubs, and a very small species of *epidendrum*, or green wyth, common in this parish. In it I found one egg, about an inch long, in colour like that of a common duck, that is, of a sullied white." (MSS. i. 72.)

Mr. Hill saw one building in a vale in Clarendon in August. It had begun a domed nest of dried grass, rather loosely interwoven, then about as large as a child's head, but probably it would have been larger. It was in a fork of an outer limb of a logwood tree at the edge of a thicket, about seven feet from the ground. The bird went and came, bringing materials repeatedly, while my friend was watching it.

Sam maintains that he has repeatedly seen it enter

large cumulative nests, on high cotton-trees, having exactly the same appearance as those of the Black Shrike, (p. 190,) and that he has heard them utter the same remarkable cry. The suspicion was obvious, considering that both birds are black, and nearly of one size, that he had confounded the one with the other. Yet against this, I may state, that he is perfectly familiar with both species, that he is accustomed to discriminating observations, and that he asserts that it was impossible for him to be mistaken in one of the cases. I would add, that notwithstanding colour and size, the appearance of the two birds is very different. Yet on the 16th of June, a lad brought me a nest of small size and cup-like form, which he named as the nest of the "Black Sparrow," and described the bird which frequented the nest, and which he had driven from it when about to take it, as being wholly black, except the throat which was red; a description which will apply to no other than this. Moreover, the nest was placed on a coffee-tree, agreeing with the fact that in some districts the species is named "Coffee-bird." It is a rather deep cup, about 2½ inches wide in the clear, made of very coarse materials, such as dried and half-decayed leaves of trees, the long broad leaves of rushes or flags, intermingled with stalks of grass and herbaceous weeds, and with slender roots: there is a slight lining of thatch-threads, and of blades of grass torn into narrow strips, and arranged circularly. From such materials, it may be supposed that the workmanship was loose and slovenly. Three eggs were

found in it, of an elongated form, measuring 1 inch by $\frac{13}{20}$; of a pale glaucous white, thickly strewn with longitudinal dashes of pale reddish-brown, confluent at the larger end.

The Black Bulfinch is said to frequent coffee trees, for the purpose of feeding on the ripe berries. The stomachs of such as I have examined, contained farinaceous seeds, comminuted into a pudding-like mass.

It has a simple but rather sweet song, which may be imitated by rapidly pronouncing the syllables *wis, wis, wis, wis, weē*, the last much protracted. It can hardly be distinguished from the note of the Black Shrike. Early in the morning in spring, he delights in a rapid vibratory strain, which I can compare to nothing, for tone and duration, so well as to the sound produced by one turn of the key in winding up a musical snuff-box.

One day in April, as I was riding past the cliffs at Cave, on the road to Savanna-le-Mar, I observed two Cotton-tree Sparrows, whose motions arrested my attention. They were both males in adult plumage. One presented himself to the other, opening his beak to the utmost; when the other seized something in his mouth, and tugged at it; this action was repeated several times, but whatever was the object pulled at, it appeared pretty firmly attached to the lower mandible, and refused to come away. From the evident desire of the one operated on, I conjecture that it was an application for the removal of some extraneous object which had accidentally stuck into the flesh of the mouth, and gave

pain or inconvenience. But if so, how interesting an instance of intelligence communicated; for intelligence, and combined action, there certainly was. At length the operator, having done what he could, flew off: but the poor unsuccessful patient, after a few seconds, followed him, and sought him again in the bush, while I rode on my way.

A male which I shot, and but slightly wounded, displayed much energy, and some ingenuity, in its persevering efforts to escape, in which, after being twice captured, it at length succeeded. When I attempted to seize it, it bit at me fiercely, and pinched my finger so forcibly as I could not have anticipated. The beak is very powerful, doubtless for the sake of opening or crushing hard seed-vessels.

I have dissected a female at the end of April, with eggs in the ovary as large as pigeon-shot, the plumage of which differed from that of the male, only in the black being *not quite* so bright. The name *violacea*, is a strange misnomer, as there is not the slightest tinge of violet.

Robinson has mentioned the prevalence of these birds on the Liguanea mountains, in a passage so interesting, that I quote it entire. "In ascending from Mr. Elletson's estate called Merryman's Hill, about four miles from Hope River plantation, after you get about a mile and a half beyond the said Merryman's Hill, the air suddenly turns cool, and the plants and trees are entirely different from what you observed before, excepting two or three, which continue all the way up. There also you hear the

Black Bulfinches first begin to whistle, which are continued all the way up to the top of the mountains; and, indeed, they are the only birds you hear, for there are hardly any Nightingales; but they have the Grey-eyed Thrush, whose notes are not much inferior in sweetness but longer. In these mountains hardly any cockroaches are seen, but a very small kind. The wood-ant, that destructive insect, is also a stranger to these mountains." (MSS. iii. 131.) By the Grey-eyed Thrush, I suspect he means the Glass-eye: or else the White-eyed Flycatcher.

In the valuable drawings of the Doctor, he has one carefully executed, of a bird considerably larger than this, which he calls the Pied Bulfinch of the mountains, but which I have supposed to be the present bird in the partial albinism, to which all black birds seem subject. There are, however, some details which make this rather uncertain. The whole plumage, including the red gorge, (which is rather crimson than ferruginous) is studded with large white patches; beside which there is a large square spot of white, occupying the middle of the wing: the outmost two tail-feathers on each side are also white, and the forehead is pale yellow. Should it prove to be distinct, I propose for it the name of *Pyrrhula Robinsonii.*

To these *Fringilladæ*, I would add, on the authority of Mr. Hill, the Rose-breasted Grosbeak of Wilson, (*Guiraca Ludoviciana*, Sw.)

ORDER.—SCANSORES. (*Climbers.*)

FAM.—PSITTACIDÆ. (*The Parrots.*)

YELLOW-HEADED MACAW.*

? *Ara tricolor*, LE VAILL. pl. 5.

IF this be not the *Tricolor* of Le Vaillant, which is the only Macaw I am aware of marked with a yellow nape, it is probably undescribed. The two descriptions do not, certainly, agree exactly; yet still I cannot but think the bird seen by Robinson, whose description I give below, to be this very rare species. Of the present specimen the Doctor says, "This bird I saw stuffed. The legs and tail were wanting. It seemed less than the common Red and Blue Macaw. By what I can judge from this sample, this bird has never yet either been figured or described. Sir Henry Moore, late Lieutenant Governor, often assured me that the Jamaica Macaw was very different from any he had ever seen. The subject now before us was shot [probably about 1765,] in the mountains of Hanover parish, about ten miles east of Lucea, by Mr. Odell."

* "Basal half of upper mandible black, apical half ash-coloured; lower mandible black, tip only ash-coloured. Forehead, crown, and back of neck bright yellow. Sides of face around eyes, anterior and lateral part of neck, and back, a fine scarlet. Wing coverts and breast, deep sanguine red. Winglet and primaries, an elegant light blue. The legs and feet were said to have been black; the tail red and yellow intermixed." (Rob.)

Latham has attributed *Ara aracanga* and *ararauna* to Jamaica; the former on the authority of Brisson.

The latter, Browne (Hist. Jam. 472,) expressly says he himself killed there. The Rev. Mr. Coward at present Curate of Highgate, near Spanish Town, informed me, that being in St. Elizabeth's, in a plain at the foot of a chain of mountains dividing that parish from St. James, and consequently nearly in the medial line of the island, about 1842, one of the party called, "look! look!" and looking up, he saw two birds flying over-head, which he at once saw were parrots, but of very large size: and he was told that they were Macaws. On inquiring further of those resident in the neighbourhood, to whom the birds were familiar, he was informed that their plumage was blue and yellow. These were probably *Ararauna*.

A letter just received from Mr. Hill, who kindly assisted my inquiries on the subject, says;—"I have ascertained with unquestionable certainty, that Macaws are occasionally, if not constantly, denizens of our mountain forests. They are found exclusively in the central mountains westward of the island, and are observed on the skirt of the partially cleared country, at an elevation of 2500 or 3000 feet above the sea. They have been surprised in small companies feeding on the full-eared maize, while the grain was soft, milky, and sweet, and the very husk was sugary. Every description I have received of them, makes the species to be the *Ara militaris*, the Great Green Macaw of Mexico. The head is spoken of as red; the neck, shoulders, and under-

parts of a light and lively green; the greater wing-coverts and quills, blue; and the tail scarlet and blue on the upper surface, with the under plumage both of the wings and tail, a mass of intense orange yellow.

"Autumnal rains set in with westerly winds in the Gulf of Mexico, when the Ara is said to migrate from the mountain ranges on which it breeds on the continent, and not to return till the turn of the year. From *our* birds being found only in the western parts of the island, I suspect that they are casual visitors, coming to us at the end of the year. The ordinary Parrots wing high, but the Macaws are exceedingly high fliers, and the command of the continental and insular shores, could be no difficulty to birds of their powerful, though, usually, not long-sustained flight. When the October rains set in, storms and deluges from the mountains of the continent to the west of us, send myriad flocks of aquatic birds over to us, and it is extremely likely that these magnificent Parrots are driven to our shores, where they find in our genial mountains, the mild quietude of the upper summer woods of Mexico.

"A mountain district very remote, between Trelawney and St. Ann's, here and there cleared and settled,—a peculiar country called the *Black grounds*, is said to be the never failing resort of these Mexican Macaws. I have been assured that several birds have been procured there. This is said to be nearly as far eastward as they have been found. Further westward, in the neighbourhood of

the Accompong Maroons, young birds, bearing the evidence of being in the first year's plumage, have been procured from hog-hunters. One specimen, purchased from them by Mr. White, the proprietor of Oxford estate, was for some time the admiration and talk of the country round. I have been informed by those who have noticed the bird on the wing, that although the Macaws are never seen but flying extremely high, their great size, and their splendid length of tail, brilliant with intense scarlet, and blue and yellow, strikingly attract attention, if their harsh scream, heard in the hushed mountain solitudes, does not betray them. They fly from one ridge to another, journeying in pairs, and have been followed by the eye till they have alighted on the loftiest of the forest trees, in their chosen resting places."

YELLOW-BELLIED PARROQUET.*

Conurus flaviventer.

Psittacus æruginosus, var.	LATH. Syn.
Aratinga flaviventer,	SPIX. Av. Br. t. 18. f. 1.

THE large earthy nests accumulated by the duck-ants (*Termites,*) around the trunk or branches of

* Length, measured over the head, 11¾ inches, expanse 16 ¾, flexure 5¾, tail 5, rictus ¾, tarsus $\frac{6}{10}$, middle toe $1\frac{1}{10}$. Irides pale orange; cere and cheeks, pale buff.

trees, frequently afford the Parroquet a fit situation for her own domestic economy. Though easily cut by her strong beak, the thin arches and galleries of these insects are of sufficiently firm consistence to constitute a secure and strong abode. In the cavity formed by her own industry she lays four or five eggs, upon the chips and dust.

But the precaution of the poor bird in selecting a locality, and her perseverance in burrowing into so solid a structure, are not sufficient to ensure her safety or that of her young. The aperture by which she herself enters and departs, affords also a ready entrance to a subtle and voracious enemy, the Yellow Boa. A young friend of mine once observing a Parroquet enter into a hole in a large duck-ants' nest, situated on a bastard-cedar, mounted to take her eggs or young. Arrived at the place, he cautiously inserted his hand, which presently came into contact with something smooth and soft. He guessed it might be the callow young, but hesitating to trust it, he descended, and proceeded to cut a stick, keeping his eye on the orifice, from which the old bird had not yet flown. Having again mounted, he thrust in the stick and forced off the whole upper part of the structure, disclosing to his utter discomfiture and terror, an enormous Yellow Snake, about whose jaws the feathers of the swallowed Parroquet were still adhering, while more of her plumage scattered in the nest revealed her unhappy fate. The serpent instantly darted down the tree, and the astonished youth, certainly not *less* terrified, also descended

with precipitation, and ran as if for life from the scene.

The food of this species consists of various fruits and seeds. The fiddle-wood, burn-wood, fig, and pride of China, afford it plentiful and agreeable nutriment. It cuts into the plantains, both when green and ripe; and its fondness for the sweet and spicy berries of the pimento renders it the abhorrence of the planter. I have seen it on the top of a guava-tree holding something in its foot, which it cut to pieces with its beak and fed upon; probably the young fruit. When the prickly-yellow is in seed, the Parroquets come in flocks to eat of it; when they lose their wonted wariness. I have known them to resort to a large tree, overhanging the public road, day after day; the passing by of persons beneath causing little observation; generally, however, they would utter a screech or two, and then go on feeding. I have shot several individuals from this tree in succession, yet in a few minutes the flock would be there again.

Often when mortally wounded by a shot, the grasp of the climbing feet, by which the bird was hanging from the twigs, becomes convulsively tightened, and the falling body is seen suspended head downward; for some minutes, often longer, it thus remains, the wings now and then giving an ineffectual flutter, till at last one foot relaxes its hold, and then the other, and the bird falls heavily to the ground. They are often sought for the table, and I can speak from personal knowledge to their

juiciness and flavour, especially in the pimento season.

The flight of these birds is swift and rushing; in mid air they have a habit of suddenly deviating from the straight line of their course, making a sharp doubling, and then pursuing the same direction as before. They go in flocks, usually above the trees, and utter harsh screams as they fly. The sexes are precisely alike in plumage.

BLACK-BILLED PARROT.*

Psittacus agilis.

Psittacus agilis,		GMEL.—Le Vaill.	Perr. 105.
? *Psittacus æstivus,*	var. *a.*	LATH. Syn.	
? „ „	var. *δ.*	Ibid.	

ALL the Parrots are gregarious, cunning, watchful, noisy, mischievous; and thus are like the Monkeys. This and the following species are so much alike in manners and general appearance, that a description of one applies nearly to the other. Flocks varying from half-a-dozen to twenty or thirty, fly hither and thither over the forest, screeching as they go, and all alight together on some tree covered with berries. Here they feast, but with caution; on a slight alarm one screams, and the whole flock is on the wing, vociferous if not mu-

* Length 13¼ inches, expanse 20¼, flexure 6$\frac{4}{10}$, tail 3¼, rictus $\frac{8}{10}$, tarsus $\frac{9}{10}$, middle toe 1$\frac{2}{10}$. Irides dark hazel: cere blackish ash-colour.

sical; and brilliant if not beautiful; particularly when the sun shines on their green backs and crimsoned wings. They generally prefer lofty trees, except when, in June, the ripe yellow plantain tempts them to descend, or when the black berry shines upon the pimento. Of the latter, the flocks devour an immense quantity, and the former they destroy by cutting it to pieces with their powerful beaks, to get at the small seeds.

One day in January, when the pimento on the brow of Bluefields Mountain was about ready for picking, being full-sized, but yet green and hard, I observed large flocks of Black-bills and a few Parroquets, flying to and fro with voluble chatter, now alighting to feed on the hot aromatic berry, now flying off, and wheeling round to the same neighbourhood again. They were not at all shy, but, with unusual carelessness of our proximity, scarcely moved at the report of the gun which brought their companions to the ground. Of two which I shot on this occasion, I found the craws stuffed with the cotyledons of the seed alone, the most pungently aromatic part of the berry; the fleshy part having been, as I presume, shorn off by the beak and rejected. When alighted, as is often the case, on a dry branch, their emerald hue is conspicuous, and affords a fair mark for the gunner; but in a tree of full foliage, their colour proves an excellent concealment. They seem aware of this, and their sagacity prompts them frequently to rely on it for security. Often we hear their voices proceeding from a certain tree, or else have marked

the descent of a flock upon it, but on proceeding to the spot, though the eye has not wandered from it, and we are therefore sure that they are there, we cannot discover an individual. We go close to the tree, but all is silent, and still as death; we institute a careful survey of every part with the eye, to detect the slightest motion, or the form of a bird among the leaves, but in vain; we begin to think that they have stolen off unperceived, but on throwing a stone into the tree, a dozen throats burst forth into cry, and as many green birds rush forth upon the wing.

The screaming of this and the following species differs from that of the Parroquet, so far as to be easily distinguished. That of the latter consists of a series of harsh screeches, of comparative length; that of the Parrots is less shrill, more broken into short and rapid articulations, forming series of varying length, separated by momentary pauses. It is, in fact, much more like a hurried chattering.

In some specimens, the patch of bright scarlet in the centre of the wing, is diminished to a slight tinge on the edge, or even entirely wanting. This is not a difference of sex, but probably of age.

I cannot well identify our Black-bill with Latham's "Jamaica Black-billed Green Parrot;" he calls it var. α of *Æstivus*, which it surely is not; var. δ agrees in other particulars. Ours seems, as it were, made up of both descriptions.

YELLOW-BILLED PARROT.*

Psittacus leucocephalus.

Psittacus leucocephalus,	LINN.—Pl. Enl. 549.
Psittacus collarius, (young?)	Ibid.

THE Yellow-bill is less common than either of the two preceding, but its habits are the same. The same fruits supply it with food, but in addition, it divides the oranges, to procure the pips, and even cuts the acrid cashew-nut, to extract the kernel; which the others will not do.

The present and the preceding species build in holes in lofty trees; often a hollow bread-nut is chosen, and often the capacious and comfortable cavity chiselled out by the Woodpecker. Four eggs are usually laid; and when the green feathers begin to clothe the callow heads of the promising family, they are too often taken by some daring youth, who having watched the parent to her hole, climbs the giddy elevation. He feeds the young with ripe plantain or banana, till they approach maturity, and their appetites can digest plainer food; for when grown they will eat almost anything.

All the three species learn to speak, but the Parroquet is barely intelligible; the Black-bill is

* Length 13½ inches, expanse 22¾, flexure 7¼, tail 4 $\frac{8}{10}$, rictus 1, tarsus $\frac{8}{10}$, middle toe 1 $\frac{6}{10}$. Irides dark hazel; cere and eyelids greyish-white. Sexes exactly alike.

the most docile, but the beauty and superior size of the Yellow-bill causes it to be preferred for the cage. One in full plumage, and able to articulate with distinctness, usually fetches about twenty shillings in the towns.

Robinson, in enumerating the Jamaican *Psittacidæ*, distinguishing them from introduced specimens, mentions in addition to those I have given, "the Mountain Parroquet." (MSS. ii. 88.)

FAM.—PICIDÆ.—(*The Woodpeckers.*)

YELLOW-BELLIED WOODPECKER.

Picus varius.—LINN.

Aud. pl. 190.

FOUR or five specimens of this beautiful Woodpecker, all females, occurred to us, in the months of December, January, and February; but at no other time was it seen. I have no doubt it is a winter migrant from the northern continent, where, however, Wilson states that it abides all the year. I have nothing to give of its history: its manners, as far as observed, were those common to the tribe; the stomachs of such as I dissected, contained wood-boring larvæ.

* Length 8¾ inches, expanse 15½, flexure 5, tail 3¼, rictus 1 8/16, tarsus 17/20, middle toe 18/20.

RADIOLATED WOODPECKER.*

Centurus radiolatus.—WAGL.

Edw. 244.

THIS species greatly resembles the Red-bellied Woodpecker of Wilson, (*C. Carolinus*,) from which it may be distinguished by the plumage of the rump and tail-coverts being barred as the back, and the tail being black, with the two middle feathers crossed by narrow bars of white on their inner vanes, and the outmost feathers spotted with white on the outer edge.

This is among the commonest of Jamaican birds, being abundant in all situations, from the shores to the summits of the mountains. His loud screams as he darts along from one dead tree to another, perpetually betray his proximity even before we see him. Like the rest of his tribe, his flight consists of a series of undulations, or rather a succession of arcs of a circle, performed by alternate strokes and closures of the wings. Though rapid and rushing in its character, it does not extend to long distances, nor does it appear capable of protraction, the wings having the shortness and hollowness which mark a subordinate power of flight. Occasionally he alights on a horizontal

* Length 11 inches, expanse $17\frac{3}{4}$, flexure $5\frac{1}{2}$, tail $3\frac{7}{10}$, rictus $1\frac{13}{20}$, tarsus $1\frac{3}{10}$, middle toe $1\frac{3}{10}$, versatile toe $1\frac{3}{10}$, nearly. Irides bright hazel, or scarlet.

branch, but if so, it is lengthwise, not across, as other birds perch; neither does he stand up on the toes, elevating the tarsi, but squats down close to the wood, clinging rather than perching. Far more usually, however, he flies direct to the trunk, on whose perpendicular side he alights as suddenly as if he had been stuck there, and either commences rapping with his powerful beak, or hops upward till he finds a more promising scene of operations. If he wishes to descend, which he does but seldom, it is backward and in a diagonal direction; or sometimes he turns, so as to come down sideways, but it is never more than a short distance, and is performed so awkwardly, and in so scrambling a manner, as to indicate that he is not formed for descending.

His food is not confined to boring larvæ; the large red ants, so common in the woods, I have found numerous in his stomach; and at other times, hard strong seeds enclosed in a scarlet pulpy skin. In March we sometimes find him filled with the white pulp and oval seeds of the sour-sop. He is said to feed on the beautiful cherries (*Cordia collococca*) which in brilliant bunches are ripe at the same season; and I have seen him engaged in picking off the pretty crimson berries, that hang like clusters of miniature grapes from the fiddlewood (*Cytharaxylon*). Sometimes he extracts the pulp of the orange, having cut a hole through the rind; and mangoes he eats in the autumn. He does damage to the sugar-cane, by chiselling away the woody exterior, and sucking

out the juice, and gets shot for this feat, by the owners.

I have never seen the nest, but I have seen the bird go in and out of a round hole, far up the stipe of a dead cocoa-nut palm, where doubtless it was nesting.

FAM.—CUCULIDÆ.—(*The Cuckoos.*)

RAINBIRD.*

Saurothera vetula.

Cuculus vetula,	LINN.—Pl. Enl. 772.
Saurothera vetula,	VIEILL.—Gal. Ois. 38.

INTERESTING to myself, as being the first bird that I obtained in Jamaica, I mention the fact, because the mode in which I procured it is illustrative of one of its most remarkable characteristics. A day or two after my arrival, I was taking a ramble with a little lad, who was delighted to be my pioneer and assistant; we had climbed a hill which was clothed with large timber, so densely matted with lianes and briers as to be almost impenetrable. We had, however, got into the thickest of it, when a large and handsome bird with a long tail, beautifully barred with black and white, ap-

* Length 15½ inches, expanse 14$\frac{3}{10}$, flexure 4$\frac{6}{10}$, tail 6¾, rictus 2$\frac{1}{10}$, tarsus 1$\frac{6}{10}$, middle toe 1$\frac{2}{10}$. Intestine 16 inches, very tender; two cæca, about 2 inches long. Irides hazel; orbits scarlet. The sexes exactly alike.

peared on a low shrub within a few feet of us, watching our motions with much apparent interest. My little friend informed me that it was a Rain-bird, but that it had received also the title of *Tom Fool*, from its silly habit of gratifying its curiosity, instead of securing its safety. Without wasting many words, however, the youth picked up a "rock-stone," as pebbles are called in Jamaica, and delivered the missile with so skilful an aim, that the bird dropped to the ground, and became the first-fruits of an ornithological collection.

I have often seen the bird since, and always with the same manners, jumping from twig to twig, or climbing with facility up the slender stems of the young trees, gazing at the intruder; and if driven away, flying only a few yards, and again peeping as before. It is little seen except where the woods are high, but is widely scattered on mountain as well as lowland.

The wings are remarkably short and hollow, like those of the Gallinaceæ, the bird displaying the unusual phenomenon of a length greater than the expanse. Conformably to this, the bird is seldom seen to fly except from tree to tree; more usually leaping in a hurried manner along the branches, or proceeding up the perpendicular bole by short jumps. When it does fly, it glides nearly in a straight line, without flapping the wings. It often sits on a branch in a remarkable posture, the head lower than the feet, and the long tail hanging nearly perpendicularly downward. When sitting it now and then utters a loud and harsh cackle, unvarying in note, but in-

creasing in the rapidity of its emission; and sometimes this sound is produced during its short flights. All the time of this effusion, the beak is held widely opened. It may be imitated in some degree, by repeating the syllables, *ticky ticky ticky*, for about a minute, as rapidly as they can be uttered. It is frequently seen on the ground in morasses and woods, when it proceeds by a succession of bounds, the long tail held somewhat high, the head low: the tail is jerked forward by the impulse at each pause of motion; and the whole action is like that of the *Crotophaga*.

When held, it is fierce, trying with widely opened beak to bite, and uttering angry screams; the tail expanded. A male, which had been knocked down with a stone, but not much hurt, on being put into a cage, was outrageous when one's hand was placed near the wires, dashing from side to side, now and then snapping at the hand, and snarling all the while, exactly in the tone of an angry puppy.

It is extremely retentive of life; sometimes when a wounded one has come into my possession, I have been distressed at the vain efforts that I have made to deprive it of life, without absolute destruction of the specimen. The craw is large and protuberant, below the sternum, and is usually much distended. I have found in various individuals large caterpillars, locusts, *phasmata*, spiders, *phryni*, a *whole mouse*, lizards, &c. Robinson found in one a large Green Anolis, eight inches long, coiled up in a spiral manner, the head being in the centre. He says it bruises the heads of lizards, and then swallows

them head foremost, and the stomach being of a roundish form, he conjectures that the lizard must necessarily be coiled in this manner. Mr. Hill had one alive for several weeks; it seized cockroaches and other insects, when put into its box, and ate fresh meat, if chopped small.

I know nothing of the nest, except what the following note may afford. A young friend informs me that he once observed a Rainbird carrying "trash" into the hollow or fork of the divergent limbs of a logwood tree. Some little while after, passing that way, he observed a nest-like accumulation of similar substances, but as it was beyond reach, he took a long stick to poke it out. In doing so, he pushed out an egg, which was about as long as that of the Tinkling, but not so broad: its colour white with many spots, but he had no distinct recollection of what hue they were.

"When pairing," observes Mr. Hill, "the male bird attracts the female by gracefully displaying his plumage. His long graduated tail, which insensibly blends tints of drab-grey with black, and terminates with a border of white, is then seen expanded. The short rufous wings are spread out, and the whole plumage, from the sage-grey, hair-like, downy web of the back, to the soft, dull yellow under feathers, are in motion, as the bird endeavours by playful dalliance to win his mate's attention."

HUNTER.*

Old Man.—Rainbird.

Piaya pluvialis.

Cuculus pluvialis,	Gm.—Sloane. pl. 258.
Piaya pluvialis,	Lesson.

The appellation of Rainbird is indiscriminately applied to both this and the preceding, as is, in a less degree, that of Old Man. I use a term by which I have heard it distinguished, in St. Elizabeth's, perhaps derived from the perseverance with which it "hunts" (i. e. searches) for its prey.

The manners of this fine bird greatly resemble those of its relative, and its prey is also similar. It is a bird of large size and imposing aspect, and its puffed plumage and long barred tail give it an appearance of even greater magnitude than it possesses. Its voice is sometimes a cackling repetition of one sound, increasing in rapidity until the separate notes are undistinguishable. At other times it is a hoarse croaking. The craw projects below the sternum, and the skin of that part of

* Length 19½ inches, expanse 19½, flexure 7½, tail 11¾, rictus 2, tarsus 1¾, middle toe 1⅛. Irides hazel; feet bluish grey; beak black, gonys pale grey. Plumage extremely loose and unwebbed. Head dark grey, merging on the neck into dark greyish-green, which is the hue of the back, rump, and wings, with metallic gloss. Tail feathers broad, graduated, glossy black, tipped with white, broadly on the outmost. Throat and breast white, the latter greyish; the remaining under parts deep red-brown. Eyelids blackish. Interior of mouth black.

the abdomen is destitute of feathers and even of down.

The obesity of this bird is often extraordinary; I have seen the fat lying over the bowels, between the stomach and the vent, three-fourths of an inch thick. When alive, it has a strong musky odour, like that of the John-crow.

"In the changes of our mountain roads," remarks Mr. Hill, "from deep masses of shadowy forest, with prodigious trees overgrown with moss, and climbing shrubs and lianes, to luxuriant and park-like pastures, flowery hedgerows and shrubby thickets, —two sounds, remarkable and different from each other, prevail. The one is the tapping of the Woodpecker, broken in its measured monotony by an occasional scream; and the other the rattle of the Rainbird, varied by a cry at intervals like the caw of the Crow tribe. The deep forest is the haunt of the Woodpecker,—the open thickets the resort of the Rainbird. The insects which form the food of the one, are those that subsist out of the sun-light, and perforate the alburnum of trees, or live beneath the bark; those that are the prey of the other, are the tribes that find their sustenance on the surface of vegetation, exist in the shade, and only resort to the open air to shift from place to place."

YELLOW-BILLED CUCKOO.*

May-bird.

Coccyzus Americanus.

Cuculus Americanus,	LINN.—Aud. pl. 2.
Cuculus Carolinensis,	WILS.
Coccyzus Americanus,	VIEILL.
Erythrophrys Americanus,	SW.

ALL our Cuckoos but the present are permanent residents; this is but a summer visitor. Nor is it at any time very common, a few only taking up their abode with us, while their brethren continue their vernal migration from the southern to the northern continent. In the "Notes of a Year," before quoted, Mr. Hill has the following observations on this species. "The visit of the May-bird is one of the precursors of the spring rains in this island. The hazy atmosphere which precedes the showers of the vernal season, has already dimmed the usual lustre of the sky; the winds have ceased; the heat has begun to be irritably oppressive; the air to assume a steamy denseness, hot and heavy; the butterflies have left the parched and blighted pastures to congregrate whereever they can find any kind of moisture, and the insects to attract the Nightjars to the lowlands, when

* Length 13 inches, expanse $16\frac{1}{2}$, flexure $5\frac{4}{10}$, tail $5\frac{1}{2}$, rictus $1\frac{2}{10}$, tarsus 1, middle toe 1.

the stuttering voice of this Yellow-billed Cuckoo is heard among the prognostics of the coming rain.

"The May-bird, unlike the other Cuckoos with us, that never migrate, prefers straggling trees by the wayside to hedgerow thickets. With the first rain that falls, the hedge-trees, cleared of their dust, have begun to put forth fresh foliage, and to form those closer bowers favourable to the shy and solitary habits of this bird. It is [comparatively] long-winged, and its swift arrowy flight might be mistaken for that of some of the wild-pigeons. It ranges excursively, and flies horizontally with a noiseless speed, dropping on the topmost stems of trees, or descending into the middlemost branches. When alighting, it betrays its presence by a sound like the drawling *cuck-cuck-cuck* of a sauntering barn-door fowl."

One which was slightly wounded, on being put into a cage with some Pea-doves, began to attack them by munching out their feathers. It was therefore placed by itself, when it sat moody and motionless; attempting occasionally, however, to seize cockroaches which were put in to it, and biting spitefully at the hand when approached.

In skinning this bird, an operation very difficult from the tenderness of the skin, my attention was called to a number of Entozoa, which were writhing about on the surface of the sclerotica of the eyes, within the orbit. They were very active, about half an inch long, and as thick as a horse-hair. Under a lens, they appeared whitish, pellucid, cylindrical, but tapered at each end; the intestinal canal

distinctly visible, much corrugated and in motion. There were traces of transverse wrinkles. Sam informed me that he had observed them once before in the eyes of the same species.

BLACK-EARED CUCKOO.*

Coccyzus seniculus.

Cuculus seniculus,	LINN.—Aud. pl. 169.
Erythrophrys seniculus,	SW.

THE tawny underparts, contrasted with the sober grey of the upper, glossed like shot-silk, and the long tail beautifully barred with black and white, render the subject before us one of the handsomest of this genus of Cuckoos. It is a dull, and, so to speak, a stupid bird; we not unfrequently see it suddenly fly out from the woods, and crossing the road rest on a branch at a short distance, where it sits little disturbed by the proximity of passengers: or jumps to another twig near, and thence to another. I have never heard it utter a sound. It lives on soft insects, large spiders, &c., which are stationary, and which it seeks by thus peeping among the trees, and for the capture of which long flights would be unnecessary.

I know nothing of its domestic economy; but in

* Length 12½ inches, expanse 15½, flexure 5, tail 6¾, rictus 1 4/10. tarsus 1 1/10, middle toe 1 1/10, versatile toe 9/10. Intestine 10 inches; two cæca, 1¼ inch long, about 1½ inch from cloaca.

January I have found eggs in the ovary, as large as dust-shot.

The shortness of the intestinal canal, and its freedom from convolutions is remarkable, and struck me forcibly by comparison with that of a White-winged Dove, which I happened to dissect on the same day with this. The length of the intestine in the granivorous bird was forty-one inches, that in the insectivorous, ten.

SAVANNA BLACKBIRD.*

Crotophaga Ani.—LINN.

Pl. Enl. 102.

IN all open places, but particularly savannas and pastures which are occupied by cattle or horses, these birds are seen all day long, and all the year round. They are perhaps the most common of the birds of Jamaica. Familiar and impudent, though very wary, they permit a considerable acquaintance with their manners, while an approach within a limited distance,

* Length 14¾ inches, expanse 17¾, flexure 6¼, tail 7¾, rictus 1 $\frac{8}{10}$, height of beak $\frac{9}{10}$, tarsus 1 $\frac{8}{10}$, middle toe 1 $\frac{9}{10}$.

Irides deep hazel, feet black; beak black, the ridge semitransparent, furrowed perpendicularly. Plumage black, with rich purple reflections, most conspicuous on the wing-quills; the clothing feathers have the disk of an intense black, with a lighter border, brilliantly iridescent; the borders on the neck are larger in proportion, and are sometimes brassy.

Intestine 12 inches; two cæca, 1½ inch long, 2 inches from the cloaca.

The young have not the scaly character of the plumage, nor any ridge upon the beak.

in a moment sets the whole flock upon the wing, with a singular cry, which the negroes please to express by the words, *going-awa-a-ay*, but which may be as well described, according to the fancy of the hearer, as *How-d'ye?* or *Anī*. The appearance of the bird in its gliding flights is unusual; the body is slender, the head large, and the beak enormous; and as in flying it assumes a perfectly straight form, with the long tail in the same line, without flapping the wings, it takes the aspect, on a side view, rather of a fish than of a bird. The centre of the upper mandible is hollow, and the surrounding part is composed of cells of very thin bone, as is the lower mandible. It thus bears a great resemblance to the beaks of the Toucans and Hornbills. The belly is thin and lank, and the bird, even though fat, has always the appearance of meagreness: the shabbiness of the downy feathers that clothe the belly and the long tibiæ, adds to this effect. In these particulars, as well as in general aspect and manners, the Blackbird displays a strong affinity to the Cuckoos and Toucans; indeed, if I may judge from a living *Rhamphastos carinatus* which was some time in my possession, it seems nearer to the latter than to the former.

The food of our Blackbird, though consisting mainly of insects, is not confined to them. We usually find the stomach distended with caterpillars, moths, grasshoppers, beetles, and other insects, to such a degree that we wonder how the mass could have been forced in. But I have found these contents mixed up with, and stained by the berries of the snake-withe; and in July I have found the

stomach crammed with the berries of the fiddle-wood, (*Cytharaxylon*,) which had stained the whole inner surface of a bright crimson. Flocks of these birds were at that time feeding on the glowing clusters profusely ripe upon the trees. Stationary insects are the staple food; to obtain which, they hop about grassy places, and are often seen to jump, or to run eagerly at their prey; on which occasions the long tail, continuing the given motion after the body has stopped, is thrown forward in an odd manner, sometimes nearly turning the bird head over heels. It is probably to protect the eyes from the stalks of weeds and blades of grass in these headlong leaps, that the projecting brows are furnished with a row of short but very stiff overhanging bristles; but what purpose was served by the high and thin knife-blade of a beak, I was ignorant, till informed by Mr. Hill, who observes that it "enables the bird to open out the soft earth, and seek for its insect food; it also facilitates its access to the vermin imbedded in the long close hair of animals. I am assured," he adds, "that if a patch of cows' dung be examined after Crotophagas have been searching for the larvæ of insects, it will be found furrowed as if a miniature plough had passed through it."

The form of this organ has given occasion, in Hayti, where also it is common, to the appellation of "bout de tabac," that is "bowl of tobacco pipe;" it is also called there *Judeo*.

The name *Crotophaga*, (tick-eater,) is no misnomer, as has been, without foundation, asserted by some who never saw the living bird. Almost every

one in Jamaica is aware that the Savanna Blackbird, as well as the Grakle, feeds on the parasites of cattle. I made particular inquiries about this soon after my arrival, and was assured of the fact by persons who had witnessed it multitudes of times, and who could not "mistake" the Blackbird for the Grakle, their whole form, voice, and motions, being different.

Afterwards, however, I had repeated opportunities of personal observation on this point. One day I noticed a cow lying down, around which were four or five Blackbirds, hopping on and off her back, and eagerly picking the insects from her body; which service seemed in no wise unpleasing to her. I have also seen them leaping up on cows when grazing; and, on another occasion, jumping to and from a horse's back; and my lad Sam has repeatedly observed them clinging to a cow's tail, and picking insects from it, as far down as the terminal tuft. Had cattle been pastured near where I resided, I should doubtless have had many more ocular demonstrations: but the evidence is amply sufficient. In some of these cases, the occurrence was close to me, so that there was no possibility of deception, especially as, being aware of the conflicting statement, I looked with the more interest to satisfy myself.

But stationary insects are not the only prey of the Crotophaga; in December, I have seen little groups of them engaged in the evenings, leaping up from the pasture about a yard into the air, doubtless after flying insects, which they seemed to catch. One day in March as I sat at dinner, my attention was arrested by what seemed to be

a green bird chased by several Crotophagas, near the top of a lofty tree at some distance, and presently saw that it was a very large lepidopterous insect; it flew over the woods about a quarter of a mile before I lost sight of it, when it appeared to alight on the top of a tree. The birds did not pursue the chase far. I have seen one with a dragon-fly in its beak, which it had just caught, but it may have been while resting. At another time I saw that a Blackbird had actually made prey of one of our little nimble lizards (*Anolis*). These circumstances show, that like the Toucans, the Ani is to some extent omnivorous.

Though its usual mode of progression on the ground is by hopping, or rather bounding, the feet being lifted together, the Blackbird is seen occasionally to *run* in a headlong manner for a short distance, moving the feet alternately. He is fond of sitting in the morning sun on a low tree with the wings expanded; remaining there perfectly still for a considerable time. In the heat of the day, in July and August, many may be seen in the lowland plains, sitting on the fences and logwood hedges with the beaks wide open, as if gasping for air; they then forget their usual loquacity and wariness. Often two or three will sit in the centre of a thick bush, overhung with a matted drapery of convolvolus, whence they utter their singular cry in a calling tone, as if they were playing at hide-and-seek, and requiring their fellows to come and find them.

The statement that the Blackbird builds in com-

pany, forming an immense nest of basket-work by the united labours of the flock, is universally maintained by the inhabitants of the colony. It is said to be usually on a high tree, where many parents bring forth and educate a common family. Mr. Hill, whose statements in Jamaican Ornithology are worthy of unlimited confidence, observes: "Some half-a-dozen of them together build but one nest, which is large and capacious enough for them to resort to in common, and to rear their young ones together. They are extremely attentive to the business of incubation, and never quit the nest, while sitting, without covering the eggs with leaves, to preserve them at an equal temperature." The only instance in which I ever met with a nest, while it is not conclusive, is rather in favour of this opinion than the opposite. In July I found a Blackbirds' nest in a Bastard Cedar (*Guazuma*); it was a rather large mass of interwoven twigs lined with leaves. *Eight* eggs were in the nest, and the shells of *many more* were also in it, and scattered beneath the tree. The eggs were about as large as a pullet's, very regularly oval, of a greenish blue, but covered with a coating of white chalky substance, which was much scratched and eroded on them all, and which was displaced with little force. On being broken, the interior was peculiar; the glaire was less tenacious than usual, but more jelly-like, yet at the same time thinner in consistence; but what surprised me was, that in each egg this glaire filled at least three-fourths of the whole space, while the yolk, flattened in form, not larger in diameter than

a coat-button-mould, and about twice as thick, was adhering to one side and end. It was pale, and resembled in appearance that of a hen's egg, when just turned by boiling. I examined several, and found all alike.

I close this account with some pleasing notes of the species by Mr. Hill. "Though the Savanna Blackbird is classed among the scansorial or climbing tribe of birds, and has the yoke-formed foot,—like another class of the Cuckoo tribe among us, of which we have four or five different kinds,—it is generally a downward, not an upward climber. It enters a tree by alighting on the extremity of some main branch, and gains the centre of the foliage by creeping along the stem, and searching for its insect food. Unlike, however, our Cuckoos, which are solitary-feeding birds, it does not range from stem to stem, and search the tree through. The Blackbirds, moving in flocks of half-dozens, tens, and twelves, seldom penetrate far among the leaves. They glance along the branches rapidly, and silently quit the tree they have visited, by dropping one by one on some inviting spot on the green sward under them, or start away suddenly, the whole possé together, to some near-by thicket, to which one among them generally leads with that peculiar shrill and screaming cry that distinguishes them from every other bird of the field.

"These Savanna Blackbirds are favourites with me. Other winged wanderers have their season, but these are the tenants of the field all the year round. Their life is in the sunshine. Where-

ever there are open lands in tillage or pasture, with intermingled trees and shrubs, there these social birds frequent:—always familiar and seemingly fearless, but never omitting to set their sentinel watchmen to sound their cry when any one obtrudes nearer upon them than to a certain space within their social haunts.

"After a passing fall of rain, one of our sudden mid-day thunder showers for instance, when the full burst of sunshine, bright and fierce, breaks again on the freshened landscape;—the first bird seen creeping out from the thicket to dry his wings, and regain the fields, is the Savanna Blackbird. The Mocking-bird, ready as he is with his song, to gladden the landscape once more, is seldom before the shrill Blackbird, in breaking the hush that succeeds the overpast shower. *Que-yuch, que-yuch, que-yuch* is heard from some embowered clump not far off, and a little stream of Blackbirds, with their long tails and short gliding wings outstretched in flight, are seen straggling away to some spot, where insect-life is stirring, in the fresh, damp, and exuberant earth. The sun is levelling its slant beam along the plains, and the sea-breeze is breathing fresh and fragrant with a sense of reviving moisture from the afternoon showers, *que-yuch, que-yuch, que-yuch* is heard again, hastily and anxiously repeated; and the little birds are seen scrambling into the hedge-rows, and the Blackbirds are pushing from the outer limbs of the solitary thicket, from whence they sounded their cry of alarm, to gain the inward covert of the leaves. A hawk with silent stealth is

skimming along the bordering woodland, gliding occasionally downward to the lesser bushes in the Savanna. The tocsin of the Blackbird, however, has warned the whole field, and not a voice is heard, and not a wing is stirring.

"In the hot and sultry days when the dews have ceased to fall, and all vegetation is parched and languid, the Blackbirds are seen wending their way at an early hour of the afternoon to the river-side, trooping in little parties. They have found some spot where an uprooted tree has grounded in the shallow stream. Here they are perched, some tail upward, drinking from the gliding waters below, some silent and drooping, some pluming themselves, and some in the sands that have shoaled about the embedded trunk of the tree, washing in the little half-inch depths of water. They will continue here till sunset, when they will start off laggingly, the signal being first given by some one of the flock, who has announced, that it is time to seek their coverts for the night, with the still peculiar cry of *que-yuch*."

I am inclined to attach very little importance to the wrinkles on the beak as indicating specific difference: these, as well as the form and size of the organ, varying considerably in individuals from the same locality; the result, I have no doubt, of age.

ORDER.—GYRANTES. (*Circlers.*)

FAM.—COLUMBADÆ. (*The Pigeons.*)

RING-TAIL PIGEON.*

Columba Caribbea.

Columba Caribbea,	LINN.—Temm. Pig. pl. 10.
Columba lamprauchen,	WAGL.

OF all our Doves, none is so exclusively arboreal as this. The Bald-pate, the Blue Pigeon, and the Ring-tail are essentially tree-doves, but I have seen the first feeding on the ground, and the second is often seen running; but all who are acquainted with this bird's haunts and habits concur in affirming that he is never seen to put his feet upon the earth. Though it is probable that he must occasionally procure gravel, to aid in the comminution of his hard food, and that, when the resources of the wild-pines are exhausted in the long droughts, he must descend to drink at the mountain ponds,

* "Length 16 inches, expanse 24, tail $5\frac{3}{4}$, tarsus 1, middle toe $1\frac{3}{16}$. Irides brilliant orange; orbits carmine; beak black; feet coral-red. Crown, sides of head, and fore-neck, obscure reddish-purple; throat white. Back of neck splendid purplish green; back, rump, thighs, and parts beneath the wings, pale blue. Basal half of tail pale blue, gradually merging into a blackish-blue bar, nearly an inch broad, which crosses the feathers; thence to the tip, greyish-blue. Wing quills blackish brown, the first five edged with white; coverts towards the back, and the pinion [winglet?], dull olive; the rest of a very dull blue. Breast and belly dull reddish-brown. Weight 10oz. 2dr"—(Robinson, MSS., ii. 114, abridged.)

or gully springs, it seems that he cautiously selects his occasion, when unwitnessed by human eyes. And yet it is said not to be a shy bird, nor, at certain times, difficult to obtain by those who have made themselves acquainted with its habits. It inhabits the most recluse and dense mountain forests, where few are able to follow it, but the negro fowlers. The penetration of steep mountain-woods, abounding in prickly bushes, and tangled, beyond all description, by twining and pendent lianes, many of which are formidably spinous, where there is nothing like a pathway, and the ground is strewn with enormous masses of honey-combed limestone, over whose sharp points the hunter must often climb at the risk of his neck,—or with a loose rubble that slips from beneath the feet, and causes continual falls, is an enterprise that demands no small degree of courage, temper, and perseverance. The naked feet of the negroes catch hold of the rocky projections, almost like the hind hands of the monkey, and they can proceed with rapid and noiseless step; while the shoes of the white man, in his slow and painful progress, betray, by the displacing of stones, and the crackling of twigs, his approach to the wary bird, while yet far away. The musquitoes also, that, thirsting for blood, and swarming in such situations, dance around his face with their maddening hum, and soon inflame head, hand, and foot with their pungent stings, make a tyro long to be out again, almost before he has lost sight of the open sky of the clearing. But it is the presence of these most annoying insects, which

affords an opportunity of obtaining the highly prized Ring-tail. This bird appears to suffer more from their stings than others; or else its superior sagacity has taught it a resource of which others are ignorant, or unwilling to avail themselves. It is aware that these little insect-pests cannot abide smoke, and wherever the blue clouds curl gracefully through the tall trees from the woodman's fire, the Ring-tail is said to resort thither, if within the neighbourhood, and solace itself with a temporary suspension of insect assaults. But, alas! it is only to expose itself to a more fatal peril, for the negro sportsmen have marked the habit, and fail not to take advantage of it. Whenever they have noticed the birds feeding on the berries of any particular tree, they take an early opportunity of kindling a fire beneath it, near which they conceal themselves, so as to watch the tree. The birds begin to arrive, and are shot down by the fowler one after another; the repeated flashes and reports, and the falls of their companions, driving the survivors away for a few moments only from the attractive spot, to which they again and again return till the gunner's ambition is satisfied. They are frequently brought to Kingston, Savanna-le-Mar, and the other towns, and are eagerly purchased for the table; though, as the distance which they are carried usually prevents their arrival on the day they are killed, they are almost invariably deplumed and drawn, and the inside strongly peppered before they are sent to market. Hence specimens for the naturalist, are to be obtained only by a special expedition. Of the three

superlative delicacies of which the natives of Jamaica boast, the Ringtail holds the undisputed pre-eminence. The others are the Fresh-water Mullet, and the Black Land-crab. Dr. Chamberlaine (Comp. to Jam. Alm. 1840) mentions this bird as "the most luscious dainty of his class, or of any other. I am acquainted," he further observes, "with no bird that the sportsman pursues, that can be compared to the Ring-tail Pigeon, for the richness, the delicacy, and the tenderness of his flesh. He is, during the months of September, October, and November, a mass of luscious fat, and his plump and well-enveloped flesh acquires for him a superiority over that of all his tribe." It is a common thing, at the period of their high condition, for birds shot from a tall tree to burst asunder with the fall.

The Ring-tail is stated invariably to perch near the middle of a tree, usually in the fork of the principal limbs; where, when seated, it will remain quietly looking down at the fowler, perhaps within a few yards of his head. The centre of those trees which are clothed with a dense tangled mass of withes or creepers, is preferred; and it is asserted that on no occasion is this bird to be seen perched on an exterior twig or branch. The Blue Pigeon sometimes manifests the same predilection; but with him it is only when the gusty "norths," rocking the flexible branches, would make his seat on them uncomfortable if not insecure.

The Ring-tail will sometimes leave his solitudes, and come down to eat the berries of missletoe, growing on sour-sop and other trees. A friend has

seen four thus engaged on a tree in the house-yard. It eats the seed of the yam also in the provision ground.

When the vernal rains have copiously descended, the "negro-yam" sends out plentifully its young and tender shoots: the tips of these, with the unopened leaves and buds, are particularly agreeable to this exquisite bird, and it may often be shot at that season in the grounds of the mountain slopes. It is, however, then in poor condition.

By an Act of the Colonial Legislature, 10 Ann. xvi. 3, wild pigeons were forbidden to be killed in the parishes of St. Catherine or St. John's, or on any island or kay, in the months of May, June, and July, under a penalty of forty shillings, or slaves to have thirty-nine lashes. Since the abolition of slavery, this, as well as many other laws, of similarly oppressive character, has been repealed.

Robinson found in one, the hard perforated seeds of the small palmetto-thatch. He mentions also, that in the autumn they owe their fatness to feeding on the fruit of the trumpet-tree, wild-raspberries, and wild star-apples. "It is remarkable," he observes, "that the thighs [tibiæ?] are twice the length of the legs [tarsi?]."

The unwonted absence of the seasonal rains in the spring of 1846, rendered my efforts to obtain specimens of this fine bird fruitless, though I sent experienced persons many times to their usual haunts. I am therefore compelled to give a description from Dr. Robinson's MSS. The preceding accounts, also, are the results, not of personal

observation, but of careful and minute and repeated inquiries. Mr. Hill writes me that it has been abundant on the Highgate mountains since my departure.

Temminck asserts that the Ring-tail seems to be spread over the whole Antilles and *Bahamas*, but is not aware that it exists on the continent. Mauge found it at Porto Rico, where it is said to associate in flocks of many hundreds. (!)

BLUE PIGEON.*

Columba rufina.

Columba rufina,	TEMM. Pig. 24.
Columba Cayanensis,	BONN.

THE Blue Pigeon is found both on the mountains and in the lowlands. On the former it seems less to affect the deep forest, than such woods as skirt cultivated ground. When the purple berries of the

* Length 16 inches, expanse 26½, flexure 9¼, tail 5¾, rictus $1\frac{4}{10}$, tarsus $1\frac{3}{10}$, middle toe $1\frac{9}{10}$ (including claw $\frac{5}{10}$). Iris consists of two circles, the inner one pale blue, the outer pale orange, the junction of the colours being marked by a line of dark blue. Orbits grey, edges of eyelids dull red. Beak black; feet lake-red. Head, neck, breast, and belly, dull reddish-purple. Scapulars and inter-scapulars dusky grey. Wings greyish-black; secondary greater coverts blue grey, edged with white; mid-coverts red-brown, merging into the surrounding colours. Back, rump, and tail, slate blue, the latter deepening towards the tip. Chin pale grey. Sides, thighs, under wing and tail-coverts, blue grey. Sexes barely differing.

phytolacca are ripe, about the end of the year, these pigeons flock in considerable numbers to feed at dawn and at evening. About the same time they are numerous in the lowlands, for I have found them plentiful in the large morass that extends along the shore from Crabpond to Parker's Bay. They were flying about in pairs, for the most part, among the black mangrove trees, on whose seeds they were probably feeding. But I found in the stomachs of those which I shot, the white blossoms of a species of missletoe which is abundant there, and in one the bean-like seeds of, as I believe, the madjo-bitter (*Picramnia*). Early in February I visited the mangrove woods of Mount Edgecumbe morass, to seek these birds. They were rather numerous, but alighted only on the summits of the tallest trees. Finding that they were very shy, I seated myself and remained quietly watching. Thus I obtained several successive shots, as they appeared to come round to the spot periodically, perhaps once in half-an-hour. Two or three were in company, and as they flew from tree-top to tree-top, their movements were announced by a guttural *jug, jug,* and by the loud rushing of their powerful wings. Frequently one would chase another round the trees, playfully, which I conjectured to be a symptom of pairing.

The common note of the Blue Pigeon resembles somewhat the barking of a cur; *bow-wow—wōw,* the last syllable protracted and falling. It is much like the *Sary-coat-blue* of the Bald-pate, but the short second syllable is wanting.

For delicacy and flavour of flesh this species scarcely yields to its congener, and is but a little less in request. It is dark in hue, but exquisitely delicious, tender, juicy, and free from bitterness.

It is an arboreal bird, but not quite so exclusively as the Ring-tail. Like the Bald-pate, he is often shot, by forestalling him at his feeding tree, before day-break. In form he agrees with the bird just named; his legs and feet are stout and strong; his head and neck small and slender; the plumage of his nape forms a sort of ridge. M. Temminck, probably having never seen the bird alive, and not being aware of the very singular peculiarity of the iris mentioned in the note, has given his figure red eyes. The two colours impart a very unusual character to the physiognomy of the species; it is constant, not accidental.

About the end of April, I was informed of a Blue Pigeon's nest on a lofty limb of an inaccessible cotton tree. It was a more substantial structure than those of its congeners, being made of dried grass, or similar material, as well as twigs. A Bald-pate had a nest on a contiguous tree, and the neighbouring birds were continually squabbling. I have never seen the eggs.

The Blue Pigeon is said to inhabit not only all the great islands of the West Indies, but also Guiana.

BALD-PATE.*

(*White-crowned Pigeon.* BON.)

Columba leucocephala. LINN.

Aud. pl. 177.

THIS fine dove is common in almost all situations, but chiefly affects the groves of pimento, which generally adorn the mountain pens. The sweet aromatic berries afford him abundant and delicious food during the pimento season; the umbrageous trees afford him a concealment suited to his shy and suspicious character; and on them his mate prefers to build her rude platform-nest, and rear her tender progeny. Wary exceedingly, the Bald-pate, from his seat among the topmost twigs, discerns the gunner, himself unseen, and intimates his vicinity only by the rushing of his strong wings, as he shoots off to some distant part of the grove. In the breeding season, however, when alarmed from the nesting tree, he does not fly far, and soon returns; so that the sportsman, by concealing himself, and watching the bird's return, may bring him down. When the pimento is out of season, he seeks other food; the berries of the sweetwood, the larger ones of the breadnut, and burn-wood, of the bastard cedar, and the fig, and the little ruddy

* Length 16 inches, expanse 23½, flexure 7¾, tail 5½, rictus 1¼, tarsus 1 1/10, middle toe 1¼. Irides cream-white; eyelids purplish flesh colour.

clusters of the fiddle-wood, attract him. He feeds early in the morning, and late in the afternoon: large numbers resort to a single tree, (though not strictly gregarious,) and when this is observed, the sportsman, by going thither before dawn, and lying in wait, may shoot them one by one, as they arrive. In September and October they are in fine condition, often exceedingly fat and juicy, and of exquisite flavour. In March the clammy-cherry displays its showy scarlet racemes, to which the Bald-pates flock. The Hopping Dick, Woodpecker, and Guinea-fowl, feed also upon it. In April, Sam tells me he has seen as many as thirty, almost covering a tree, feeding on berries which he believes were those of the bully-tree. Late in the year they resort to the saline morasses, to feed on the seeds of the black-mangrove, which I have repeatedly found in the craw; I have even seen one descend to the ground beneath a mangrove, doubtless in search of the fallen seeds. In general, however, the Bald-pate is an arboreal pigeon, his visits to the earth being very rare. He often feeds at a distance from home; so that it is a common thing to observe, just before nightfall, straggling parties of two or three, or individuals, rushing along with arrowy swiftness in a straight line to some distant wood.

The Bald-pate is a noble bird; plump, yet of a graceful form; the iridescent scale-like feathers of his neck, with their black borders, are very striking: he is staid and sedate in manners, when sitting, and there is something of supercilious sternness in his countenance, which, combined with his snow-

white head, always reminds me, strange as the comparison may appear, of the grand Bald-Eagle. His coo is *Sarȳ-coat-blūe*, uttered with much energy, the second syllable short and suddenly elevated, the last a little protracted and descending.

Incubation takes place chiefly in the months of June and July. In Bluefields morass many nests are found on the tallest black-mangroves, and are much robbed by the negro youths, who rear the young for sale: the native pigeons being, more than any other birds, kept in cages by the creoles. The nest is merely a very slight platform of dry twigs, rudely attached, on which two eggs are laid. They are of delicate whiteness, in form very regularly oval, and in dimensions $1\frac{1}{2}$ inch by $1\frac{1}{10}$. I never heard of its breeding on rocks.

I add a few particulars of some which I kept from early age. I shot a young one on the 2nd of September, breaking the tarsus; and about a week afterwards another was brought me which may have been rather older. The former appeared not to have finally left the nest. Both were exceedingly ugly; long-necked, thin-bodied, the head not well rounded, the fleshy part of the beak prominent, and its base unfeathered. The whole plumage was blackish ash-coloured, each feather slightly tipped with paler, and the feathers of the head terminating in little curled grey filaments, which added to the uncouth appearance of the birds. In a week or two I perceived these filaments were gradually disappearing, and about the beginning of October the small feathers began to clothe the base of the beak:

these feathers were greyish-white, and at the same time the grey hue was beginning to spread up the forehead, I believe by the dropping of the black feathers, and their immediate replacement by the white ones. About this time also the general plumage began to assume the blue hue of the adult, in patches; and on the 12th of October, I first observed the beautiful iridescent feathers of the neck, but as yet only on one side. These notes refer to the elder; the other was about two weeks more backward. On the 16th, I first heard it coo; for some time it had now and then uttered a single note, but on this day it gave the whole *Sarÿ-coat-blūe*, but short, and in a low tone; and that only once. By the end of November the white had spread over the whole crown as in the adult, but was not yet so pure or so smooth. A third, which I purchased in November, though a young one of the season, having been reared from the nest, was much more mature both in plumage and size. By the end of that month the crown of this one was *perfectly* in the adult plumage, the neck feathers complete on both sides, the body plump and smooth. This individual, when first put into the cage, was very cross, pecking at all the others, including some Pea-doves, whenever they came near him, and even stretching himself down from his perch to reach them as they walked under him. One or two of the Pea-doves suffered particularly, for he munched out their feathers by mouthfuls, laying bare a large portion of their backs. He soon became more reconciled, but never associated with them, never

descending from his perch all day, except to feed or drink. The other Bald-pates walked about a good deal with the Pea-doves, and were rather playful. Any new object they would examine and lay hold of. Their cage, a capacious packing-box, was lined with paper; somehow or other, a bit of it was torn up; the Bald-pates were continually pulling at this, and were not content till they had stripped off a large space. A hole in the gauze front had been darned with thread; they would take the loose ends in their beaks and tug at them. Sometimes they would seize a stick or twig, and drag it about the cage. A White-belly, taken in a springe, and put with them, would not eat the Indian corn, with which they were fed, and was supplied with orange-pips: the Bald-pate would run up to the White-belly when feeding, and playfully endeavour to snatch the pips from him as he picked them up; when, however, he succeeded in getting possession of one, he immediately dropped it: it was only the fun he wanted. If I inserted my finger through the gauze, he would seize it with his beak, and, as it were, *chew* it, and tug at it in various directions, turning, and sometimes quite inverting, his head. He would always take a grain of corn from my hand, even if he did not eat it.

Towards the end of the year, all of my Bald-pates used to coo frequently, and, what is strange, often in the night. When wakeful from sickness, I have heard it from the adjoining room at intervals, four or five times during the night: especially on those nights in January, when the furious *norths* blow

with so much violence; the bird probably awakened or made uncomfortable by the cold and howling gusts that penetrate every room, as if they would "blow the house out of the windows." On each occasion the whole set of syllables was repeated twice or thrice in quick succession, preceded by a low note, and then the former silence was maintained. The imitation of their coo, which may be very accurately effected, always attracted attention from the birds, manifested by their eyes turned towards the sound, and their necks stretched out.

WHITEWING DOVE.*

(*Lapwing.*)

Turtur leucopterus.

Columba leucoptera,	LINN.—Edw. 76.
Zenaida leucoptera,	G. R. GRAY.

THIS is a Turtle of much elegance. Its general aspect resembles that of the Pea-dove, but its colour is less warm, and its figure less plump. The singular

* Length 12¼ inches, expanse 19, flexure 6¼, tail 4½, rictus 1, tarsus 1, middle toe 1 8/10. Irides bright orange; feet lake-red; beak black; lores and eyelids light blue. Upper parts dusky umber, the crown, hind-head, and nape suffused with purple; loins and tail-coverts blue-grey, the latter tipped with umber. Wing-quills blue-black, the first four narrowly edged, the secondaries tipped, with white, primary-coverts and winglet black; greater and middle secondary-coverts pure white with grey bases,

white band on the wing is at any distance a sufficient distinctive mark. It is the only gregarious Dove we have; for the small companies of the Ground Dove can hardly entitle it to be so called: the Whitewing, however, associates in flocks of twenty or thirty, which, when removing, fly in a body, as do tame Pigeons. In the early months of the year, when the physic-nut *(Jatropha curcas)* is ripening, and oranges come in, the Whitewing becomes plentiful in open pastures, and the low woods in the neighbourhood of habitations; the seeds of these fruits, and the castor-oil nut, forming the principal part of their food. At this time they are very easily shot, as they walk about on the ground. They are also taken very readily in springes, and in traps called *calambans*, baited with orange seeds. Sometimes when the foot is caught in the springe, the bird will remain very quietly; at others it struggles much, so as almost to be deplumed: cats often find them, and leave little but feathers to the owner. Occasionally the bird is caught by the neck, and I have been told of an instance, in which a Whitewing taken thus, flying with impetuosity on the alarm, cut its head absolutely off with the string, the body falling one way and the head another. From the ease with which they are procured, they

forming a broad band from shoulder to hind angle. Uropygials umber, tail-feathers grey with broad bluish-white tips, the grey becoming black at its termination, and ending abruptly: the white is more pure, and the grey nearly black on the under surface. Neck, throat, and breast pale umber, glossed on the side with green, crimson, and gold reflections; a spot of deep blue under the ear; belly, sides, and under tail-coverts greyish white. Sexes alike. Intestine 41 inches: no cæcum.

are a good deal eaten, though seldom fat, and rather subject to be bitter.

When the rains fall, we see the Whitewings but seldom; they betake themselves to the deep woods and impenetrable morasses, when their presence is indicated by their loud stammering coo. The full coo consists of more notes than that of any other of our Doves; rendered into negro-English, it runs thus: "*Since poor Gilpin die, cow-head spoil,*" the last note protracted and falling moaningly. This, however, is not uttered, as far as my experience goes, when coming out into "the open" to feed. Two which I had with other Doves, caged, were usually silent; but in Mr. Hill's larger collection, the Whitewings were most pertinaciously vociferous. All the day long, the four-fold coo, "*two bits for two,*" or "*what's that to you?*" loud and vehement, saluted our ears. Sometimes it was replaced by a sort of chorus, more musical, "*toora-loora, toora-loora.*" The other Doves cooed occasionally, but the Whitewings incessantly.

The food of this Pigeon, when retired from view, I am not acquainted with; it is probably the seeds and berries which supply its congeners. The seed of the sour-sop is perhaps agreeable to it, for one of my lads once caught a Whitewing by bird-lime set for Blue Quits at a ripe sour-sop. Farinaceous and pulpy berries are found in the woods at all seasons, so that the Pigeons and other frugivorous birds have not only abundance but variety. Its nest is not very often met with. I am informed that it occasionally builds in a pimento; Robinson

says that it builds also in the orange, and sea-side grape, in May, a very slight and narrow platform of rude twigs, and lays two eggs, of a pale drab hue.

The general form, the shortness of the tarsus, the length of the tail, and its manners, associate this species rather with the arboreal than the terrestrial Doves. It, however, approaches the latter. Those which I kept in a cage, habitually rested on the highest perches, while the Pea-doves generally rested on the floor.

The Whitewing is swift and strong on the wing; but its flight is not accompanied with that peculiar whistling, produced by the wings of the Pea-dove.

PEA-DOVE.*

(*Zenaida Pigeon.*—Bon.)

Zenaida amabilis.

Columba Zenaida,	Bonap.—Aud. pl. 162.
Zenaida amabilis,	Ibid.

The open pastures, or the grassy glades of pimento pens, are the favourite haunts of this pretty Dove, where it walks on the ground singly or in pairs. In such open situations, it can discover, and

* Length 11¾ inches, expanse 19¼, flexure 6¼, tail 4, rictus 1, tarsus $1\frac{1}{10}$, middle toe $1\frac{1}{10}$.

mark the motions of an intruder, and long before he is within gun-range it is upon the wing. Few birds are more difficult of approach, unless the intervention of a wall or a thick bush permit a concealed access. Its flight is rapid and forcible, and performed with a peculiar whistling of the wings, by which it is at once recognised, though unseen.

The Pea-dove is frequently seen in the middle of dusty high-roads, but whether they resort thither for the purpose of dusting, or to procure gravel, I cannot say, as they usually fly as soon as seen. When the rains have ceased, the increasing drought renders these, as it does many other birds, more familiar; and they may be seen lingering on the borders of streams and ponds. Indeed they seem, of all our Doves, to haunt most the vicinity of water; particularly those dreary swamps or morasses which are environed by tall woods of mangrove. In the winter months, when the pastures are burnt up with drought, we may hear all day long their plaintive cooing, proceeding from these sombre groves, though it is not much heard in any other situation. The coo consists of five deliberate notes, loud but mournful, "*Sary-coat-true-blue*," all in the same tone, save the second, which is short and elevated. It resembles the note of the Carolina Dove.

The Pea-dove subsists on various fruits and seeds: pimento-berries, orange-pips, sop-seeds, castor-oil nuts, physic-nuts, maize, and the smaller seeds of pasture weeds are some of his resources. His flesh is white and juicy, and when in good condition is

in general estimation. His form is plump, and his plumage beautifully smooth; though its colours are sober, they are chaste and pleasing; and the aspect of his countenance, with his dark liquid eye, is remarkably engaging.

I kept several of these birds in a cage for nearly a year, but they were too timid to be interesting in confinement. They could not bear any approach to them, without fluttering violently. They were very restless, walking rapidly about the cage-floor all day long, invariably walking over each other, rather than deviating from their course. Only one or two habitually perched. The Pea-dove has the habit of jerking the head by quickly shortening, and then lengthening the neck, immediately and invariably followed by a flirt upward of the tail; this action my captives were perpetually performing at intervals of a few seconds, when not walking. They slept on the floor of the cage, but were extremely wakeful. I have many times crept silently into the room at various hours of the night, taking off my shoes and moving with extreme caution, but always found them wide-awake; perhaps sensible of the light of the candle, even when the eyes were closed. My servant, however, found them asleep very early one morning, when they awoke with a start: the head was not behind the wing.

They were jealous of other birds, and, notwithstanding their gentle physiognomy, irritable and pugnacious. A Cashew bird that was a fellow-prisoner, they would strike at with the wing, and even if I myself suddenly approached, the wing

was raised in defence. They were spiteful towards an unoffending Kildeer Plover, pecking at him so violently as to pull the feathers from his side, and make him cry out. I fed them with maize.

I have now in my possession a Pea-dove, shot by Sam in December, the lower mandible of which is distorted by the point being turned on one side, so that the mandibles cross as in the Cross-bill. The tips, however, could be brought into contact. It was shabby in plumage, and in very poor condition, the cause of which was obvious, for, open the plumage of the under parts wherever I would, the body was swarming with lice (*Nirmus*); and *a large proportion* of the body feathers were crowded with nits to such a degree, that *on one feather* which I placed under a lens I counted upwards of 170; and there were other feathers more crowded than this. I judged it to be a moderate estimate, that on this unfortunate bird there were not less than 500 lice, and 10,000 nits. On one of the thighs, where they were very thick, there was an ulcer. In addition to this, two large bird flies (*Ornithomyia*) flew from the plumage, while I was examining it.

The nest is, as usual, a loose platform of twigs interlaced, with scarcely any hollow, and no leaves; it is often built in an orange, or a pimento, and contains two eggs of a drab hue. Near the end of March we started a Pea-dove from the centre of a lofty Ebby palm (*Elais*) in Mount Edgecumbe; it immediately alighted on the ground just before my lad, and began to tumble about in a grotesque manner, affecting inability to fly. Sam was not to

be caught, however; but calling my attention to the circumstance, we began to peer among the fronds of the tree, where we presently discerned the projecting ends of the twigs that constituted her nest, the centre of her fears and anxieties. It was inaccessible, however, when discovered.

GROUND DOVE.

Chamæpelia passerina.

Columba passerina,	LINN.—Aud. pl. 182.
Chamæpelia passerina,	SW.

THOUGH it would be scarcely proper to term this little bird gregarious, it is certainly social, being rarely seen alone. In pairs or small companies of three or four, it frequents pastures, on the short turf of which it runs with considerable speed; and is rather loath to take wing, often allowing a person to approach within a few yards. If one fly, however, all fly; but seldom go far; alighting either on the ground again, or on some neighbouring tree of small elevation. As it runs along, the tail is usually erected, which gives it the aspect of a miniature fowl.

I have found the craw full of small seeds of

* Length $6\frac{1}{2}$ inches, expanse $10\frac{1}{4}$, flexure $3\frac{1}{4}$, tail $2\frac{7}{20}$, rictus $\frac{6}{10}$, tarsus $\frac{13}{20}$, middle toe $\frac{13}{20}$. Irides lake-pink; feet pale flesh colour; beak orange, black at the tip; eyelids yellow.

grasses; they also eat the seeds of the *Jatropha* and of the castor-oil plant, and particularly those of the gamboge-thistle, (*Argemone*,) so common in pastures. They are fond of picking about the beds of shallots and escalions, for minute seeds exposed in the newly-turned earth. They are, therefore, readily taken in springes made of horse-hair; they are more commonly caught by the neck than by the feet, and not seldom, as I am assured, is the neck quite cut off; though I presume the springe in such cases must be of stronger material.

The Ground-dove is numerous all the year round. In March, I observed it particularly abundant on the banks of the Rio Cobre, especially on a flat gravelly bed, partially surrounded by the bending stream near Spanish Town. The boys of the neighbourhood took advantage of the thirsty birds' resort to the water, by strewing about the spot the seeds of the cockspur, (*Pisonia aculeata*); a burr so adhesive, that if one touch but a feather, it is immovable; a very little struggling entangles other feathers, and the bird is utterly helpless. So firmly tenacious is the hold, that even when the bird is in the hand the seed can be removed only by plucking away each feather it has touched. Many are caught by this singular artifice.

It is very easily deprived of life. I have known one fly into a room, and, striking its head against the ceiling, fall down and die in an instant.

From April to June the low woods resound with the coo of this little Dove. Sometimes it resembles the word *meho?* in an interrogative tone, loud,

querulous, and pertinacious in iteration. At others it is like children calling *whoop*. It is not at all plaintive in its character.

There is a singular projection on the outline of the inner web of the fourth primary, in this genus, and more slightly on that of the fifth. The object of this peculiarity it is not easy to conjecture.

Dr. Robinson, having weighed one, records the weight as one ounce sixteen grains, troy. He mentions also, what I have not seen, that "the irides consist of, first, one ring of yellow, then one of black, a narrower of black, and another of yellow, broader." (MSS. ii. 97.) Wilson's description appears to me to have been taken from a preserved skin.

WHITEBELLY.*

Peristera Jamaicensis.

Columba Jamaicensis,	LINN.
Columba rufaxilla,	RICH. et BERN.
Columba frontalis,	TEMM. Pig. 10.

THIS lovely Pigeon is chiefly confined to the upland districts; where its loud and plaintive cooing

* Length 12¾ inches, expanse 18¾, flexure 6¼, tail 4¼, rictus 1, tarsus $1\frac{5}{10}$, middle toe $1\frac{2}{10}$, outer and inner toes $\frac{9}{10}$. Intestine 30 inches; no cæca. Irides whitish, with a granulated appearance, reddish at the outer edge. Feet crimson. Beak black. Forehead pure white, becoming slate blue on crown; hind-head delicate grey-blue; neck reddish brown,

makes the woods resound. The negroes delight to ascribe imaginary words to the voices of birds, and indeed for the cooings of many of the pigeons, this requires no great stretch of imagination. The beautiful Whitebelly complains all day, in the sunshine as well as the storm, "Rain-come-wet-me-through!" each syllable uttered with a sobbing separateness, and the last prolonged with such a melancholy fall, as if the poor bird were in the extremity of suffering. But it is the note of health, of joy, of love; the utterance of exuberant animal happiness; a portion of that universal song wherewith "every thing that hath breath may praise the Lord." The plumage, as usual in this family, is very soft and smooth, the expression of the countenance most engagingly meek and gentle. And it is a gentle bird: I have taken one into my hand, when just caught in a springe, full grown and in its native wildness; and it has nestled comfortably down, and permitted its pretty head and neck to be stroked, without an effort to escape, without a flutter of its wings.

This is one of those species which habitually live on the ground: in unfrequented woods, as well those which are open, as those which are choked with underwood, the Whitebelly walks about singly or in pairs picking up various seeds. About Con-

changing to amethyst, the lowest feathers brilliant green and purple. Back, wing-coverts, and uropygials dusky-brown, with slight reflexions. Wing-quills deep brown, the outer edge narrowly white, the basal part of inner webs, chestnut; true tail-feathers blue grey, with white tips. Under parts pure white, tinged with flesh colour on breast: inner surface of wings chestnut. Eyelids bluish, the edges and angles dark lake.

tent, a densely wooded mountain side, it is very numerous in June and July, feeding on sop-seeds, and many are taken in springes. The physic-nut forms a large portion of its food; as well as orange-pips; and fragments of the large seeds of the mango, chewed by hogs. Its flesh is generally esteemed; it is white, juicy, and well-flavoured, without being liable to bitterness.

As it walks to and fro, it frequently flirts the head and tail, but not so markedly as the Pea-dove. If flushed, it betakes itself to a low tree not far off, whence, if unmolested, it is soon down again. Often when seen in the woods, it runs a few yards, and then rises to fly, but as if trusting less to its powers of flight than to those of running, alights again immediately, and runs swiftly off among the bushes. It has no regular roosting-place, often spending the night on a stone, or a log, or a low bush that happens to be near the spot where it was feeding at nightfall. This is not the case with the other Doves.

The aspect and air of the Whitebelly are unlike those of its kindred. Its round head, the prevalence of light hues, and its height upon the legs, contribute to this peculiarity. Essentially a ground-pigeon, its length of tarsus enables it to run with ease and celerity; perhaps more rapidly than any other of the family.

Unlike the tree-doves, the Whitebelly usually builds in rather a low situation; often a logwood, a favourite tree with this, and the Whitewing. If in the large woods, one of moderate height is chosen.

The nest consists of a few loose sticks, with some leaves in the centre; the eggs are white.

MOUNTAIN WITCH.*

Geotrygon sylvatica. MIHI.

No description can give an adequate notion of the lustrous radiance of this most lovely bird; though it has not yet found a place in our Ornithologies. I presume it to be the "*Columba silvatica major nigro-cærulescens,*" of Browne's Jamaica, p. 468, but he has given no description; his "Mountain Witch, Mountain Partridge, or Mountain Dove," is doubtless the bird described in the following article. Mr. Selby, in his beautiful volume on the Pigeons, in the Nat. Lib., named, without characterising, the genus *Geophilus*, which, while he ap-

* GEOTRYGON. *Generic Character.*—Beak robust, rather long; both mandibles strongly arched at the tip; nostrils opening far forward. Wings short, and rounded: third quill longest; second and following quills strongly and abruptly sinuated on the outer edge; first quill sickle-shaped, not attenuated. Tail nearly even, short, (viz. less than thrice the length of the tarsus). Tarsus longer than middle toe, unfeathered, covered in front with transverse plates. Inner toe longer than outer; hallux shorter than outer toe. General form stout and plump.

G. Sylvatica. Length 12 inches, expanse 19, flexure 6½, tail 4, rictus 1, tarsus 1½, middle toe 1$\frac{1}{10}$. Irides blood-red; orbits grey, edge of eyelids scarlet; beak reddish-black; feet pale flesh colour, front of tarsi and of toes, pink, claws blackish, small and blunt. Head high and sub-conical; feathers of occiput projecting and overhanging the neck, as if a notch

plied it with confidence to *Carunculatus* and *Nicobaricus*, he assigned doubtingly to the larger ground doves of Cuba and Jamaica. But these species have no generic identity; nor if they had, could this name be adopted, as it had been previously used for a genus of *Myriapoda*.

This magnificent bird inhabits the most retired mountains, and the deepest woody glades there; places difficult of approach and rarely traversed. In the dense and lofty forest that clothes the brow of Bluefields Peak, it is very numerous, usually seen singly or in pairs, walking on the ground; the freedom of the forest there from underwood allowing it to exercise its fleetness of foot to advantage. If alarmed, it generally seeks to escape by running, its bulk and shortness of wing rendering its flight burdensome and ineffective. Its coo consists of two loud notes, the first short and sharp, the second protracted and descending with a mournful cadence. At a distance its first note is inaudible; and the second, reiterated at measured in-

had been cut with scissors; or still more, as if the head were covered with a hood which hung down behind. Forehead blackish grey, softening into a brownish tint behind: below the eye and ear is a large undefined patch of buff; chin of same hue; the rest of head, throat, neck, breast, and belly, bluish-grey; the whole neck richly glossed with pale crimson, changing to brassy-green, especially behind, where the feathers meet in a sharp ridge. Abruptly separated from the neck, a broad belt of dark red extends from each shoulder across the back, reflecting the richest purple. The remainder of back, rump, tail, and wing-secondaries and tertiaries, deep-sea-green, or black, according to the light, glossed with rich purple: on the secondary and primary coverts, the green merges into a dark bistre: primaries bright chestnut, with black shafts and tips. Inner surface of wings, thighs, lower belly, vent and under tail-coverts, chestnut.

tervals, sounds like the groaning of a dying man. These moans, heard in the most recluse and solemn glens, while the bird is rarely seen, have probably given it the name of Mountain Witch.

About a score yards from the high road, just opposite Bluefields gate, is a house lately occupied, but now deserted; the space between it and the road is now overgrown with young trees sprung up with the luxuriance of tropical vegetation, and is already a wilderness. Among the bushes, the castor-oil plant and the physic-nut are numerous; and under these in the dry season, the Whitewings assemble in search of seeds. One day in November, Sam had gone thither to set a springe, when he was surprised by the sight of a Mountain Witch on the ground almost close to him. He had, the moment before, discharged his gun, and it shows the fearlessness of this beautiful bird, that it had not flown at the report. Immediately on the discovery, the lad drew back to re-load, but before he could accomplish this, the bird began to run, and was presently lost among the bushes. On several successive days it was seen at the same spot, invariably on the ground; generally it allowed a very close approach, running when the lad advanced, but stopping to gaze if he stopped. As it stood it was observed to jerk the tail in the manner of the Pea-dove. At length Sam shot it. It was a young bird, rather smaller in size and less iridescent than the adult. Its craw was full of castor-oil nuts, and contained also a little snail. This is the only instance, I ever heard of, in which this species

came down to the lowlands: it was seen chiefly in the evening, and its object so far from its mountain home, was probably the search after water, the weather being very dry.

The relation which the development of the power of flight or of walking, bears to the colour of the flesh, is well shown by a comparison of this species with the Bald-pate or Blue Pigeon. The flesh of the tree dove is dark red; that of the Mountain Witch is whiter than a chicken's: the former the more juicy, the latter tender, but dry; both are delicious in flavour.

Various seeds and nuts I have found in the gizzards of many that I have examined, some hard and stony; others farinaceous, and comminuted. The seed of the lance-wood is said to afford it food.

The Mountain Witch is generally spoken of as rare, in the island; but I suspect the remoteness and difficulty of access of its recluse solitudes, have contributed to this opinion. Robinson gives Clarendon as one of its localities: he says it is the most beautiful pigeon in Jamaica. I should be inclined to say "the most beautiful *bird*," if we except the Long-tailed Humming-bird.

I had been assured by intelligent men, very familiar with these birds, that the Mountain Witch lays in March, in the angle of the roots of a tree, on the ground; that the young leave the nest about a week after they are hatched, and are led about by the mother, who scratches for them in the manner of a fowl. Some have declared that they have

been eye-witnesses of this; persons who have never heard that this pigeon has any systematic affinity to the *Gallinaceæ.* I made many inquiries and found the statement very general, almost universal. A female shot in March had an egg in the oviduct, shelled and perfectly ready for exclusion; it was of a dull reddish-white, unspotted; and measured $1\frac{1}{4}$ inch by $\frac{7}{8}$.

Of many which were procured for me in May, nearly every one was of the male sex; and they were shot from trees; on inquiry into this anomaly, I was told that during incubation the male invariably lodges in a neighbouring tree; a singular deviation from its ordinary habits.

There is no appreciable difference between the sexes, except that the male has the vent, under tail-coverts, and thighs of a deeper chestnut, and empurpled. The red of the quills is also brighter.

PARTRIDGE DOVE.*

Mountain Partridge.

Geotrygon montana.

Columba montana,	LINN.
Columba Martinica,	TEMM. Pig. 5, 6.
? *Peristera cuprea,*	WAGL.

I AM convinced that our Partridge dove is the *montana* of Linnæus, and not his *Martinica;* the

* Length $9\frac{1}{2}$ inches, expanse $17\frac{1}{2}$, flexure 6, tail $3\frac{4}{10}$, rictus 1, tarsus

Martinica of Temminck, and not his *montana;* the *Pigeon roux de Cayenne* of Buffon, and not his *P. de la Martinique;* and that it is not the *montana* of Audubon;—provided the descriptions and figures of these naturalists faithfully represent their originals.

This bird, the female of which is the least beautiful of all our Doves, is generally scattered. It affects a well-wooded country, and is found in such woods as are more choked with bushes than such as the Whitebelly prefers; though they often dwell together. It is essentially a ground-pigeon, walking in couples or singly, seeking for seeds or gravel on the earth. It is often seen beneath a pimento picking up the fallen berries; the physic-nut also and other oily seeds afford it sustenance. Sam once observed a pair of these Doves eating the large seed of a mango, that had been crushed. With seeds, I have occasionally found small slugs, a species of *Vaginulus*, common in damp places, in its gizzard. Often when riding through the Cotta-wood,

$1\frac{1}{4}$, middle toe $1\frac{1}{10}$. Irides golden yellow; feet flesh-colour, front of tarsi bright red; beak reddish horn-colour, base dark-red; naked skin of face blue, red in the centre; edge of eyelids scarlet.

Male. Upper parts bright chestnut, more or less flushed with a purple iridescence, chiefly on neck and back. Breast pale purplish-brown, softened to white on throat and chin; a band of deep chestnu truns forward from the ear to the throat. Belly and under tail-coverts, buff-white.

Female. Upper parts dark olive, glossed; a few (sometimes nearly all) of the feathers tipped with bay; head rather browner. Wing-quills blackish: tail blackish, outmost feather tipped with white, a broad spot of chestnut on the inner web. Throat whitish; breast and sides dusky; under parts reddish-white.

a dense and tangled coppice near Content, I have been startled by the loud whirring of one of these birds, and at the same instant its short, thick-set form has shot across on rapid wing, conspicuous for a moment from its bright rufous plumage, but instantly lost in the surrounding bushes. When on the ground it is wary and difficult of approach; but if it takes a tree, it seems less fearful, and will allow the aim of the sportsman. It is in the dry season, and particularly during the parching norths that prevail at intervals from November to March, that the Partridge, as well as one or two other species of Dove, is numerous in the lowland woods. In the summer it is much less frequently seen and then only in the deep woods.

In some districts it is very abundant, though Dr. Chamberlaine intimates that it has become scarce in the neighbourhood of Kingston. He mentions, as localities in which it may still be found, "the pastures beneath the Ferry-hills, and other cool and retired retreats in the parishes of St. Catherine's, St. John's, St. Ann's, &c." To these I can add from my own observation, that it is common about Auld Ayr and Shrewsbury woods, and abundant at Content, the Cotta-wood, and Vinegar Hill, in St. Elizabeth's and Westmoreland. In the last named locality, a lad caught twenty or more, in springes, during two or three days, in February. It is readily kept in a cage with other Doves, and fed with maize.

In the Short Cut of Paradise, where the sweet-wood abounds, the Partridge is also numerous; in

March and April when these berries are ripe, their stomachs are filled with them. Here at the same season, their cooing resounds, which is simply a very sad moan, usually uttered on the ground; but on one occasion we heard it from the limb of a cotton tree at Cave, on which the bird sitting, with its head drawn in, was shot in the very act. But at a little distance, the voice is not distinguishable from the moan of the Mountain Witch.

A notion prevails that the dark coloured bird is the male, and the rufous one the female; but I have proved the contrary, by repeated dissections.

One day in June, I went down with a young friend into a wooded valley at Content, to look at a Partridge's nest. As we crept cautiously towards the spot, the male bird flew from it. I was surprised at its rudeness; it was nothing but half-a-dozen decayed leaves laid one on another, and on two or three dry twigs, but from the sitting of the birds it had acquired a slight hollowness, about as much as that of a skimmer. It was placed on the top, (slightly sunk among the leaves) of a small bush, not more than three feet high, whose glossy foliage and small white blossoms reminded me of a myrtle. There were two young, recently hatched; callow and peculiarly helpless, their eyes closed, their bills large and misshapen,—they bore little resemblance to birds.

On another occasion, I saw the male shot while sitting; the nest was then placed on a slender bush, about five feet from the ground. There were but

two eggs, of a very pale buff colour; sometimes, however, they are considerably darker.

When seen alive, or recently killed, the affinity of the Partridge-dove to the Mountain Witch is very apparent; the stout form, the colour of the feet, of the beak, and of the eyelids, and particularly the conical form of the head, and a tendency to the projecting hood-like plumage of the occiput, help to indicate its true place. It has little resemblance to either a *Zenaida* or a *Peristera*. The flesh is very white; like that of its congener.

The woodsmen speak of a Blue Partridge, and a Red-necked Dove; the former is figured by Robinson, and is no doubt a ground pigeon. The Spanish Partridge *(Starnænas cyanocephala)* is not considered as indigenous in Jamaica, though it is frequently imported thither from Cuba. It may, however, yet be found in the precipitous woods of the north side; Albin, Brisson, Buffon, and Temminck, attribute it positively to our island.

ORDER.—GALLINÆ. (*Poultry.*)

FAM.—PHASIANIDÆ. (*The Pheasants.*)

GUINEA-FOWL.*

Numida meleagris.—LINN.

IN a country whose genial climate so closely resembled its own, and which abounded with dense and tangled thickets, the well-known wandering propensities of the Guinea-fowl would no doubt cause it to become wild very soon after its introduction. It was abundant in Jamaica as a wild bird, 150 years ago, for Falconer mentions it among the wild game, in his amusing "Adventures." I shall confine myself to a few notes of its present habits, which are in all probability those of its original condition.

The Guinea-fowl makes itself too familiar to the settlers by its depredations in the provision-grounds. In the cooler months of the year, they come in numerous coveys from the woods, and scattering themselves in the grounds at early dawn, scratch up the yams and cocoes. A large hole is dug by their vigorous feet in very short time, and the tubers exposed, which are then pecked away, so as to be almost destroyed, and quite spoiled.

* Length 21¼ inches, expanse 31½, flexure 10½, tail 5½, rictus 1½, tarsus 3½, middle toe 2$\frac{4}{10}$. Irides hazel; feet black.

A little later, when the planting season begins, they do still greater damage, by digging up and devouring the seed-yams, and cocoe-heads, thus frustrating the hopes of the husbandman in the bud. "The corn is no sooner put into the ground than it is scratched out; and the peas are not only dug up by them, but shelled in the pod." (Dr. Cham.) The sweet potato, however, *as I am informed*, escapes their ravages, being invariably rejected by them. To protect the growing provisions, some of the negro peasants have recourse to scarecrows, and others endeavour to capture the birds by a common rat-gin set in their way. It must, however, be quite concealed, or it may as well be at home; it is therefore sunk in the ground, and lightly covered with earth and leaves. A springe is useless, unless the cord be blackened and discoloured so as to resemble the dry trailing stem of some creeper, for they are birds of extreme caution and suspicion. It is hence extremely difficult to shoot them, their fears being readily alarmed, and their fleetness soon carrying them beyond the reach of pursuit. But the aid of a dog, even a common cur, greatly diminishes the difficulty. Pursuit by an animal whose speed exceeds their own, seems to paralyze them; they instantly betake themselves to a tree, whence they may be shot down with facility, as their whole senses appear to be concentrated upon one object, the barking cur beneath, regarding whom with attent eyes, and outstretched neck, they dare not quit their position of defence. Flight cannot be protracted by them, nor is it trusted

to as a means of escape, save to the extent of gaining the elevation of a tree: the body is too heavy, the wings too short and hollow, and the sternal apparatus too weak, for flight to be any other than a painful and laborious performance.

The Guinea-fowl is sometimes caught by the following stratagem; a small quantity of corn is steeped for a night in proof rum, and is then placed in a shallow vessel, with a little fresh rum, and the water expressed from a bitter cassava, grated; this is deposited within an inclosed ground, to which the depredators resort. A small quantity of the grated cassava is then strewn over it, and it is left. The fowls eat the medicated food eagerly, and are soon found reeling about intoxicated, unable to escape, and content with thrusting the head into a corner. Frequently a large part of the flock are found dead, from this cause.

Though savoury, and in high request for the table, the Guinea-fowl sometimes acquires an insufferably rank odour, from feeding on the fetid *Petiveria alliacea;* and is then uneatable.

The eggs are deposited in the midst of a dense tussock of grass, to the amount of a dozen or more. It is said that occasionally the number is greatly higher; and that they are laid *stratum super stratum*, with leaves between. If this is true, probably more than one hen participates in the maternity. The wild bird's egg measures $1\frac{7}{10}$ by $1\frac{4}{10}$ inch; and weighs 6 dr., 1 sc., 2 gr.—(Rob. MSS.)

FAM.—TETRAONIDÆ. (*The Grouse.*)

QUAIL.*

Ortyx Virginiana.

Tetrao Virginianus,	LINN.—Aud. pl. 76.
Ortyx Virginiana,	STEPH.

THIS beautiful game-bird, a native of North America, was introduced into Jamaica about a hundred years ago, where it was very soon naturalized, and became abundant. It is found in almost all situations, where there is cover; and from its peculiar manners, its loud call, and the sapidity of its flesh, is familiar to all.

It is scarcely seen but in coveys of a dozen or more, which run among the grass, and, if alarmed, lie so close, as to be unseen till a person is at the spot; when suddenly they rise from beneath his feet, and fly on rapid wing, and with loud whirr, to a short distance; then descending, run so swiftly as to defy pursuit. If, however, on springing a covey of Quail, we remain perfectly still, and keep a watchful eye on the spot whence they arose, we may chance to see one or two still squatting among the grass; for often some remain after their companions have departed.

Various kinds of pulse, and graminaceous seeds

* Length 9¼ inches, expanse 14¼, flexure 4½, tail 2$\frac{4}{10}$, rictus $\frac{7}{10}$, tarsus 1½, middle toe 1$\frac{4}{10}$.

afford it food; in winter it lives largely on the small spotted peas of the lesser fee-fee, (*Clitoria Virginiana.*)

Robinson describes the egg :—"the colour, white; length $1\frac{1}{4}$, breadth $\frac{15}{16}$ inch. Nineteen were found in one nest."—(MSS. iii. 159.) He afterwards says, "A nest has been known to contain no less than thirty."

Before I dismiss the Gallinaceous birds, I may mention an interesting fact, of which Mr. Hill informed me; that the Turkey is, as far as European knowledge is concerned, indigenous to the greater Antilles, having been found by the Spanish discoverers, already domesticated by the Indians; and that the European domestic breed is descended from West Indian, and not from North American parentage. This would perhaps tend to confirm, what has been suspected, that the domestic Turkey is specifically distinct from the wild Turkey of North America.

ORDER.—GRALLÆ. (*Waders.*)

FAM.—CHARADRIADÆ. (*The Plovers.*)

SHORT-BILLED PLOVER.*

Ægialites melodus.

Charadrius hiaticula,	WILS.—Aud. pl. 220.
Charadrius melodus,	ORD.

I HAVE nothing to add to Wilson's memoir of this little bird. About the beginning of November, they arrive in Jamaica from the north; after which they may be seen running swiftly on the mud of morasses, and on the sea-beach, in company with Sand-pipers. They feed on small mollusca, worms, &c.

KILDEER PLOVER.†

Tilderee.—Tell-tale.

Ægialites vociferus.

Charadrius vociferus,	LINN.—Aud. pl. 225.
Ægialites vociferus,	BOIE.

IT is in the large open pastures of the lowlands that the Tell-tale dwells. The traveller, as he passes along, is startled by the sudden rise of a dozen or

* Length 7 inches, expanse 14½, flexure 4⅝, tail 2$\frac{3}{10}$, rictus $\frac{5}{10}$, tarsus 1, middle toe 1$\frac{7}{20}$. Intestine 14 inches: two cæca, 1 inch long.

† Length 9½ inches, expanse 18, flexure 5½, tail 3$\frac{3}{10}$, rictus $\frac{3}{10}$, tarsus 1$\frac{6}{10}$, middle toe $\frac{13}{20}$.

twenty of these birds, almost from under his feet, before unseen, but now manifesting their presence by the shrillest cries, as they wheel swiftly round in a large circle, alighting near the spot whence they arose. In winter great numbers flock to the stony plains, which flying in a dense body afford a fair mark to the sportsman, by whom their flesh is esteemed. The majority of these birds seem to be merely winter visitants, but a few certainly do remain with us through the summer. Robinson says, they lay their eggs among the stones near the rivulets.

One which was shot and wounded in the wing I introduced to the doves, in a large packing-case, the front of which was removed, and replaced by gauze. Immediately on being put in, it began vigorously charging at the gauze, as if it had no idea of any impediment there, running backward a little way, and then dashing at it; and this without an instant's intermission, now and then leaping up, and uttering its wild cry. For a few minutes its impetuous motions seemed to stupify all the doves, who gazed in astonishment; but presently a young Bald-pate, who occupied one of the front corners, a very cross and surly fellow, began to peck and beat the little Plover, driving him about the cage without mercy. I had been struck at the first entry of the bird with its remarkable height, owing to the length of the tarsi, and the upright, bold attitude in which it stood. At length to escape the persecutions of the Bald-pate, it suddenly squatted down in one of the back corners, bringing the tarsi flat on the ground, and the tibiæ on them, so that I was now

struck with its flatness and closeness to the ground; and I saw how it is that we so often hear their cry very near, when we can see no trace of them, and often suddenly lose sight of them when watching them running. I feel assured that this squatting is the bird's natural resource for concealment; for on being alarmed suddenly, its first impulse is to bend partially the heel, bringing the body nearer the ground; if the danger appear to increase, it brings the tarsi flat, the tibiæ still being inclined; the body seems now in contact with the ground; but a greater terror brings it still lower, so that it really appears as if half sunk in the earth; and now no advance of the danger affects it, if there be no opening to run; it lies quite passive; its resource is exhausted.

My captive lay thus unmoved for a while, though the restless Pea-doves, in running from side to side, walked over it, trampling it under foot at every turn. When it did get up, however, and came to the front, it was again instantly assaulted by the Bald-pate, who struck it with his wing, and seized its beak with his own, and pinched it. Pitying it under these inflictions, I took it out, and allowed it to run about the room. Its actions now became quite entertaining; it ran backward and forward with surprising fleetness, but, not being used to the smoothness of board, though the floor was not at all polished, and wanting the support of the back-toe, its speed was continually causing it to slip, the feet sliding forward, so as to bring the bird down upon its tail. Now and then it would stop, and make re-

peated efforts to jump over the skirting-board, which being black, and the wall white, I suppose it mistook the latter for empty space. While doing this, it ever and anon emitted its loud pipe with startling shrillness. Having run into a corner, it allowed me to take it up in my hand without fluttering. When it stood, it jerked its head up and down. It was exceedingly active, when not lying close for concealment; it was not still a moment; besides the flirting of the head and tail, a tremulous motion pervaded the body, so that it seemed to be shivering. When about to take a single step, this was manifested in an odd manner; the foot touching the ground three or four times before it was put down. When it had become more at home, it devoured earthworms greedily, and would pick minute shells and *entomostraca* from a saucer of water, in which was a root of water-cress. In the cage it delighted to stand in its water-saucer, but when loose, the saucer being placed in one corner, it would run rapidly in and out, now and then stopping to pick at the contents.

My own acquaintance with the Grallatorial and Natatorial visitants of Jamaica is but slight. On the authority of Mr. Hill, I add to the *Charadriadæ* above mentioned, the Ring Plover (*Ægialites semipalmatus*), the Golden Plover (*Charadrius Virginiacus*), the Squatting Plover (*Squatarola Helvetica*), and the Turnstone (*Strepsilas interpres*).

FAM.—ARDEADÆ. (*The Herons.*)

COMMON GAULIN.*

Egretta nivea.—MIHI.

IT was on the 1st of August, the anniversary of freedom to the slave, that I first met with this beautiful bird. By a singular coincidence, Sam had been just describing it to me, as a bird not yet obtained, when, scarcely five minutes after, on going into the yard, he instantly came running in, saying, "Here is a Gaulin, Sir!" I snatched up my gun and ran out, and saw the snow-white bird sitting on a castor-oil tree, just over the brook. I crept softly towards it, but there being no concealment, it took alarm, and flew before I could approach, and I lost it among the woods. I determined, however, to seek it, and bade my lad follow me. We had noted the direction which it had taken, and pursued it towards a bend of the river. Before we had gone a hundred yards through the bush, Sam sung out; and there was the bird wheeling round in the air close to us, and in a moment it alighted on the topmost twig of a low tree. I fired, nervous with expectation, and the next instant the lovely bird was at my feet, with

* Length 21½ inches, expanse 35½, flexure 9¾, tail 3½, rictus 3¾, tarsus 4, middle toe 2 8/10. Irides pale straw-yellow; feet, cheeks and orbits, pale pea-green; beak bluish-grey, tip black, gonys white. Plumage snow-white; tips of the first six primaries dashed with pale grey.

unruffled plumage, and but a single drop of blood oozing through the neck.

Some weeks after I saw another directing its flagging flight over the pasture; it rose gradually as it proceeded, till, when over the river, it began to wheel in large circles at a considerable height. After perhaps half-a-dozen gyrations, it flew off in nearly a straight line for a quarter of a mile or more; then circled in like manner; and again pursued the same course until I lost it from sight.

The Gaulins, or Egrets, are usually shy and vigilant birds, but not invariably. One day in May, as I was riding past Cave, my attention was called to one of this species, which was fishing in the shallows off the rivulet's mouth, whither it had resorted for several days past. Its tameness was remarkable; for negro women were washing within a few yards, and it permitted me to ride towards it, and to approach almost close, without being alarmed, merely walking slowly away; till at last, when I was within three or four yards, it slowly rose to flight, but alighted not half a stone's cast distant. I was pleased to watch it a while, observing the spotless whiteness of its plumage, and the gracefulness of its form and motions, as it arched its beautiful neck with the elegance of a swan.

In some situations this is not a scarce bird. Passing along by railway from Kingston to Spanish Town, I have observed in June, the white forms of many Gaulins studding the verdant meadows called the Ferry marshes, taking their morning

meal in the shallows, and by the borders of Fresh River. Six or eight were within the space of a hundred yards, all feeding, yet not associating.

On a moringa-tree near the house at Robin's River, the young friend, to whom I am indebted for several notes, used to see the nest of a White Gaulin, consisting of sticks and twigs, and about as large as a washing-basin; but being in an enclosure, he could not examine it. He used often, in passing, to see the bird sitting in it, and looking fearlessly at the passengers; for it is close to the high-road. He described its beautiful appearance, as it sat in its unspotted purity, with its long neck gracefully bent into sigmoid curves, as it gazed hither and thither.

This bird is closely allied to the following species, from which it is distinguished by the colour of the beak, lores, and feet, and by the ashy tips of the quills.

BLACK-LEGGED GAULIN.*

Snowy Heron.—WILS.

Egretta candidissima.

Ardea candidissima,	GMEL.—Aud. pl. 242.
Egretta candidissima,	BONAP.

THIS is much more rare than the preceding species; but two specimens having fallen under my

* Length 22 inches, expanse 34½, flexure 9$\frac{1}{10}$, tail 3$\frac{1}{10}$, rictus 3$\frac{9}{10}$, tarsus 4, middle toe 2$\frac{6}{10}$. (A female.)

observation, both of which occurred in the middle of the winter. It is probably a migrant from the continent; the preceding, however, is a permanent resident with us.

From the rarity of its occurrence, I can add nothing to Wilson's account of this species; except that in the stomach of one I found twenty-nine small silvery fishes, a species of *Smaris*.

BLUE GAULIN.*

Blue Crane, or Heron.—WILS.

Egretta cœrulea.

Ardea cœrulea,	LINN.—Aud. pl. 307.
Ardea cœrulescens,	LATH.
Egretta cœrulea,	BONAP.

THE slender contour of this bird, its arching purple neck, its filamentous crown-plumes, and the long pointed scapulars arching down over its back, combine with its graceful motions and delicate hue, to give this bird an aspect of peculiar elegance. Less suspicious than most of its tribe, it will frequently allow the beholder to stand and admire it, without alarm, as it stands in some shallow stream, or secluded pool, intent on its occupation, while the glassy surface gives back its beautiful form, unbroken. Its motions are deliberate and

* Length 22 inches, expanse 37, flexure 11, tail $3\frac{8}{10}$, rictus $3\frac{7}{10}$, tarsus 4, middle toe $2\frac{8}{10}$. One cæcum, rudimentary, $2\frac{1}{2}$ inches from cloaca.

slow while watching for prey; yet its seizure of prey is sudden, and as quick as the lightning-flash. It feeds principally on small crabs and prawns; which I have always found changed in appearance, by the process of digestion; the shell reddened and the flesh coagulated, as if by boiling. In one I have found a number of minute eel-like fishes, about an inch and a quarter long, probably the fry of a *muræna;* in another, insects. It is usually found excessively fat.

A specimen, shot from a tree, fell into rather deep water; and though one foot was disabled, it struck out vigorously with the other, and *swam* in an upright posture, with the head drawn back (*not struggling*,) several yards, before it was seized.

It is not common enough for me to determine whether it is migratory or not; I have obtained specimens on the 16th of September and on the 9th of April, and through the intervening winter.

RED-NECKED GAULIN.*

Egretta ruficollis.—MIHL.

I FIRST met with this undescribed species in a little excursion up the beautiful Burnt Savanna

* Length 25½ inches, expanse 36½, flexure 9¾, neck 10, tail 2½, rictus 4½, tarsus 4, middle toe 3¼.

Irides cream-white; lores deep fulvous, with an oblong dusky spot near the edge of upper mandible; beak, black above, clay-colour beneath;

River, on the 25th of November. The immense morass through which it flows, looking like a sea of rushes, relieved here and there by clumps of the tall and slender palmetto, affords shelter and sustenance to immense numbers of aquatic birds, in common with Black River, of which this is a main branch. Of this species of Gaulin, which is not remarkable for beauty, the only specimen, besides, that I met with, was shot by Sam, at Bluefields Creek, on the 7th of May. Both individuals had been feeding on a small species of *Gobius*, called mud-fish.

Though birds which feed exclusively on animal matters are ordinarily marked by the shortness of the intestinal canal, the tribe before us forms a remarkable exception to this rule; while the body of this bird was less than four inches in length, the intestine measured seventy-two inches. The neck is more than usually long in this species.

It is doubtless a permanent resident in the Island.

feet dull pea-green. Crown, cheeks, and neck pale brick-red, mingled with dark grey feathers. Back ashy-grey, with pale reddish tips; scapulars and quills blue-grey; coverts grey with red tips, almost wholly red towards the edge of the wing. Rump and tail-coverts white. Tail dark grey. Chin, throat, and whole under parts yellowish-white, but down the front of neck an irregular series of rufous feathers, forming dashes on the white; and a few blackish feathers on the breast.

GREEN BITTERN.*

Crab-catcher.

Herodias virescens.

Ardea virescens,	LINN.—Aud. pl. 333.
Herodias virescens,	BONAP.

THIS richly-coloured species is found wherever there is running water; and most abundantly, where in the plains the sluggish streams expand into broad reedy pools, or spongy marshes. Though perfectly solitary in its habits, one may frequently see in such situations a dozen within a quarter of a mile; and as we walk on, another and another long neck is suddenly reared above the grass, to gaze at the intruder and estimate the danger. Usually they are too wary to allow of a near approach; but this varies according to the locality; for while, in lonely places, as Paradise marshes, one may easily get within shot, in such streams as Bluefields and Robin's River, where persons are continually passing, an approach within a long distance instantly puts the watchful bird upon the wing. In the former case it alights again immediately, but in the latter it does not stay its flight, until it gains the shelter of the woods, or a distant part of the stream. But in the morning, as soon as its appetite has been

* Length 18 inches, expanse $25\frac{1}{2}$, flexure $7\frac{1}{4}$, tail $2\frac{7}{10}$, rictus 3, tarsus $2\frac{2}{10}$, middle toe $1\frac{8}{10}$. Intestine $44\frac{1}{2}$ inches, very slender.

sated, its stomach gorged with prey, it often rests on some dry tree in the vicinity, whence it is less willing to fly, and may often be approached and shot with ease.

Near where the Sweet River roars and boils beneath the bridge, on the road from Bluefields to Savanna le Mar, there runs along by the side of the road, a narrow stream with grassy banks. As I was riding by, one day in July, I observed one of these Bitterns on the bank. It was not sufficiently alarmed to take flight as I passed, and I therefore drew up under the shade of a cocoa-nut palm on the other side to watch it. A few minutes it remained in suspicious stillness, eyeing me askant. At length with much deliberation it walked towards the edge, where it stood, intently watching the grass and short reeds that fringed the side. Presently it picked something from a stalk of grass, which it swallowed; it then waded slowly into the stream till the water reached above the tarsus, and there stood gazing motionless, except that now and then it suddenly altered the direction of its glance. A quick stroke of its powerful beak brought up something of considerable size, with which it walked ashore; it dropped its prey on the grass, and began to pick from it. Wishing to know what it was, I drove the bird away, but it was cunning enough to pick up its booty and carry it off, so that I was none the wiser. It was probably a root of some aquatic plant. The Bittern, however, soon returned, and taking its former place, resumed the occupation of picking insects from the grass, that

grew in the stream. As it walked hither and thither, the beautiful chestnut neck was alternately thrown forward and bridled up, with a pretty affectation, and the short tail was depressed and agitated with a rapid perpendicular vibration. I would have observed it longer, but a rude group of negroes passing, it flew away over the adjacent logwood bushes.

The flight of all the Herons is flagging and laborious: I have been amused to see a Humming-bird chasing a Heron; the minuteness and arrowy swiftness of the one contrasting strangely with the expanse of wing and unwieldy motion of the other. The little aggressor appears to restrain his powers in order to annoy his adversary, dodging around him and pecking at him like one of the small frigates of Drake or Frobisher peppering one of the unwieldy galleons of the ill-fated Armada. Now and then, however, I have noticed this and other species of Heron intermit this laborious motion, and sail swiftly and gracefully on balanced wings, particularly when inclining their flight towards the earth.

When wounded, so as to be unable to fly, the Green Bittern seeks to escape by running, which it does swiftly, the neck projected horizontally, uttering a low cluck at intervals. Its ordinary call, often uttered from the morasses and mangrove swamps, is a loud scream, harsh and guttural.

In each specimen that I dissected, the stomach was enormous, occupying the whole length and breadth of the body; it usually is found distended with the

larvæ of *libelluladæ* and *dyticidæ*, and with fresh-water prawns. The latter lie in the stomach always in the same way; viz. doubled up, the head and tail pointing forwards, the only way in which they could be swallowed with safety.

In all the *Ardeadæ* that I have examined, there are on the breast two masses of filamentous down, commonly of a pale buff hue, lying just over the furcula; beneath which, attached to the inner surface of the skin, are two flat glandular bodies of singular appearance. A similar tuft and structure are found just above the tail. With their object I am quite unacquainted.

LITTLE YELLOW BITTERN.*

Tortoiseshell-bird.

Ardeola exilis.

Ardea exilis,	GMEL.—Aud. pl. 210.
Ardeola exilis,	BONAP.

THIS minute Heron is not unfrequently seen dodging about the edges of the tall reeds that clothe the morasses, or among the rank sedgy grass that borders the streams. If alarmed it does not usually fly, but darts into the rushy cover, where the thinness of its form enables it to make its way

* Length 13¼ inches, expanse 16¼, flexure 4½, tail 1½, rictus 2¼, neck 6, tarsus 1$\frac{6}{10}$, middle toe 1¾. Intestine 41, body 2½.

with ease. Frequently it crouches, as if hoping to lie unobserved.

The stomachs of several that I have dissected contained small fishes and crustacea.

QUOK.*

Night-heron or Qua-bird.—WILS.

Nycticorax Americanus.

Ardea nycticorax,	LINN.—Aud. pl. 236.
? *Ardea violacea* (*immature*),	Ibid.
Nycticorax Americanus,	STEPH.

THOUGH a common inhabitant of the deep and fetid morasses, where the sombre mangrove crosses its tangled roots in inextricable confusion, this fine bird is much oftener heard than seen. The superstitious negro, whose heart is in his throat if he is compelled to stir beyond his threshold by night, is often startled by the loud and hoarse *quok* of this bird, suddenly emitted from the dark solitudes on either side of the road, or from the branches of a tree above his head, where the bird is roosting for the night. Occasionally, when out before day, seeking some birds which are to be shot only at dawn, I have myself heard the same loud cry

* Length 24 inches, expanse 41¼, flexure 12, tail 4¾, rictus 3⅝, tarsus 4¼, middle toe 2¾. A male, immature; occipital plumes 3½ inches long. I have not seen the adult.

repeated with deliberation, while the sudden flapping of large wings told that the bird, not less startled, was seeking a station less liable to interruption, farther within the morass. In floating down such broad streams as Burnt Savanna, or Black River, where they are margined by tall overhanging mangrove-woods, we often see this bird, seated on some high branch, which commands a wide prospect; but no sooner is the canoe espied, than he spreads his immense wings, and sails heavily off with the customary vociferation. Vigilant and suspicious, it is not an easy thing to shoot the Quok, unless the sportsman see it first, and conceal himself before he is discovered, or cautiously creep towards the secluded retreat where he hears the voice. But this is almost a forlorn hope; for the senses of the bird are very acute, and he takes alarm from the slight sounds made by the most circumspect footsteps, and escapes in time. Any unusual noise will provoke the utterance of the unmusical voice; a shout, or the report of a distant gun, will be answered from several parts of the morass; and not only by this species, but in various tones by other Herons and Bitterns.

It is a noble bird; its commanding height, erect attitude, stout built frame, fiery eye, powerful beak, hanging crest, and handsome plumage, give it an imposing aspect. Crabs and other crustacea form its principal diet; evidently swallowed entire, though often of considerable size. The flesh is dark; the fat, which is usually abundant, is of a deep yellow tinge. Notwithstanding the powerful voice of this

bird, the trachea is weak, and destitute of convolution or enlargement, save at the divarication of the bronchi.

A specimen was shot in April, in the spotted plumage, which is supposed to indicate youth. It fell into the water, wounded, where it began to swim, the head erect, and the body no more immersed than that of a duck; it struck out with both feet, and made rapid way towards the roots of a mangrove near, on reaching which it jumped out of water, and ran up, but was then secured. In this state it is sometimes called the Guinea-hen Quok, from the white spots on the grey ground; and I am not sure that it is not distinct. One that was shot in May in this plumage, a female, had eggs in the ovary as large as pepper-corns.

Mr. Hill mentions to me as indigenous *Ardeadæ*, besides such as have come into my hands,—the Great Heron (*Ardea Herodias*), the Great White Heron (*Egretta leuce?*), the American Bittern (*Botaurus minor*), and the Roseate Spoon-bill (*Platalea ajaja*).

The first of these was not an unfamiliar visitant in the vicinity of Bluefields, being often seen by myself and others at early dawn on the sea-shore, and at the edges of the mangrove swamps. Once or twice we have known a particular tree on which the bird roosted, and Sam has repeatedly

watched both before break of day and after dusk, but could never succeed in obtaining a shot at the bird, so excessive was its vigilance.

The second I once saw at a great distance while on the Burnt Savanna River in November, its long white neck towering above the thick reeds; I judged it to be between four and five feet high. At length it flew to a distant tree; the morass precluding the possibility of my gratifying my desire to possess it.

This is, I presume, the species alluded to by Mr. Hill in the former part of the following note.—"I must not omit to mention that in Cuba I saw very usually, in the small farms by the sea-side, the large White Egret or *Garzota* in a state of mansuetude. The Flamingo was not unfrequently its companion in this unrestrained captivity, if we may use this contradictory expression to represent a state where reconcilement to servitude included a full permission to the birds to use their wings in flight. The abundant food obtained from the refuse of the fishermen's nets on the beach at daybreak, supplied them with an early and full meal for the day, and explained the mystery of this willing captivity. In St. Domingo I visited a woodland farm, situated by the side of some fine freshwater ponds, the resort of numerous wild ducks in the season, where the submission to life among the poultry, on the part of one of the *small Egrets*, was the result of association only. What was most remarkable was the determination of this bird always to occupy the centre of the roost, by the side of

the patriarchal cock. I stayed purposely till roosting time, to see him shift his place after gaining the roost-tree, until he got his station in the middle of the dormitory."

In some seasons the Scarlet Ibis (*Ibis rubra*) is not an uncommon visitant on the shores of Jamaica; but I have not met with it. The present winter, 1846-7, Mr. Hill informs me, has brought it in somewhat numerously. On the same authority, I mention two species of Curlews, the one known as the Black Curlew, which is *Numenius longirostris*, the other called the White Curlew, which may be *N. Hudsonicus*, or perhaps *Ibis alba*.

FAM.—SCOLOPACIDÆ. (*The Snipes.*)

LITTLE SANDPIPER.*

Pelidna pusilla.

Tringa pusilla,	WILS. pl. 37.
Pelidna pusilla,	CUV.

ABOUT the end of the year, this little species becomes numerous in the open morasses, associat-

* Length $5\frac{3}{4}$ inches, expanse $11\frac{1}{2}$, flexure $3\frac{3}{10}$, tail $1\frac{1}{2}$, rictus $\frac{7}{10}$, tarsus $\frac{8}{10}$, middle toe $\frac{8}{10}$. Intestine 11 inches, two cæca $\frac{3}{4}$ inch long.

ing in flocks of about half a dozen, which run swiftly over the boggy and wet soil, as the other Sandpipers do.

Out of the same flock I found some, both males and females, which had the beak considerably broader and flatter than others; some also have the feet blackish, and others clay-colour. In other respects the specimens were undistinguishable.

I found in the stomach comminuted animal matter, and fragments of shells.

SPOTTED SANDPIPER.*

Actitis macularius.

Tringa macularia,	WILS.—Aud. pl. 310.
Actitis macularius,	BOIE.

THIS is a common species with us, affecting principally the margins and shallows of rocky streams, such as Bluefield River. It arrives from the north about the end of August, and remains certainly till after the middle of April, and I am not sure that individuals do not stay all the summer.

Wilson has delineated the manners of this bird in a very interesting manner, to which I have nothing to add. One which was wounded in the wing, I put into a cage for an hour or two; during

* Length 7½ inches, expanse 12, flexure 4, tail $1\frac{9}{10}$, rictus $1\frac{1}{20}$, tarsus $1\frac{1}{10}$, middle toe $\frac{9}{10}$. Intestine 9 inches; two cæca 1½ inch from cloaca, 1 inch long, very slender.

which time it frequently made a succession of charges at the wires, squatting down at intervals on the belly. When it walked, it was in a singular manner; the heel much bent, the tarsus forming an acute angle with the ground, and the toes thrown forward.

BAR-TAILED SANDPIPER.*

Totanus chloropygius.

Tringa solitaria, WILS.
Totanus chloropygius, VIEILL.

ABOUT the ponds of pastures, and fresh-water morasses, this Sandpiper or Gambet is frequently seen; and that not quite so solitarily as Wilson found it. The gizzard of one that I dissected was filled with a blackish, unctuous, filamentous substance, among which I detected some fragments of minute water-insects, a small larva of a *libellula*, &c.

One day, as I was seeking Herons in Paradise marshes, I aimed at a bird twice in succession, but each time the cap detonated without igniting the charge: the slight sound alarmed two or three Bar-tails, that were close by, and caused them to rise a few yards into the air, where they remained several seconds, hovering, the wings held perpen-

* Length 8 inches, expanse 15, flexure 5, tail $2\frac{8}{10}$, rictus $1\frac{1}{4}$, tarsus $1\frac{1}{10}$, middle toe $1\frac{1}{10}$.

dicularly, and nearly meeting over the back, after which they settled down again. One, whose wing had been broken, I allowed to run about my room, having first cut off the dangling joint. It had much of the manners of the Kildeer (see p. 331), but frequently held up the wings perpendicularly, when running.

That the power of swimming does not depend on webbed feet, is now pretty well known; some instances I have mentioned already. A Bar-tail, shot at Mount Edgecumbe pond, plunged into the water, and swam vigorously, striking out with both feet. On another occasion a Sandpiper, I do not know of what species, being wounded, plunged into a river, and swam some distance; but Sam pursuing and approaching it, it dived, and swam swiftly under water, like a Grebe, coming up at the distance of several yards, then instantly diving again, till at last it effected its escape among the reeds and bushes at the margin.

YELLOW-SHANKS GAMBET.*

Totanus flavipes.

Scolopax flavipes,	WILS.—Aud. pl. 288.
Totanus flavipes,	BECHST.

DURING the winter we met with this species on one or two occasions, always solitary, wading in

* Length 10½ inches, expanse 19½, flexure 6½, tail 2½, rictus $1\frac{7}{10}$, tarsus $2\frac{2}{10}$, middle toe $1\frac{8}{10}$.

the shallows of Crab-pond, and picking. The stomachs of those I obtained, contained a mass of pulverulent matter, which, on being separated in water, seemed to consist largely, if not wholly, of insects. Some soft larvæ, apparently dipterous, and parts of rather large yellow ants, I recognised in one, and in another the remains of *Notonectæ*.

BAR-FLANKED GAMBET.*

Totanus melanoleucus ?

Scolopax vocifera,	WILS.—Aud. pl. 308.
Totanus melanoleucus,	VIEILL.

I KNOW this species only by an individual brought to me at Spanish Town on the 21st of March. In the succeeding month, however, Mr. Hill informed me, that both this and the preceding species were particularly abundant; the numbers of these birds procured by the market sportsmen of Spanish-town and Kingston, being quite extraordinary.

The specimen I obtained does not exactly agree with the descriptions I have read, the breast and sides being marked with zigzags of black, which are large and conspicuous on the flanks. The gizzard, which was muscular, contained a greenish unctuous mass, which showed traces of scales, or else the plated covering of *crustacea*.

* Length 13¾ inches, expanse 24, flexure 7½, tail 3, rictus 2$\frac{9}{10}$, tarsus 2$\frac{9}{10}$, middle toe 1$\frac{6}{10}$, hind toe $\frac{8}{10}$.

SNIPE.*

Gallinago Wilsoni.

Scolopax gallinago,	WILS.—Aud. pl. 243.
Gallinago Wilsoni,	BONAP.

FROM November to April this beautiful and delicious bird is rather common in the morasses of Jamaica. In the fetid swamp that borders Bluefields Creek, I have principally met with it, running on the boggy places, some of which are dangerous and difficult of approach. When the tide comes in, however, the wading birds are driven to the edges of the morass, and may then be seen from the high road at Belmont, walking and feeding deliberately in the shallow water, among the slender stems of the black mangroves, not half a stone's cast from the passers by. When the water stands just above the tarsal joint, the beak can just reach the bottom: and thus it walks deliberately about, momentarily feeling the mud with the sensitive beak-tip, striking with short perpendicular strokes. Now and then we perceive the motion of swallowing. So absorbed is the bird in its occupation, that I have shouted aloud, without its taking any notice; nor when its eye at last caught the motion of my hand, did it more than run, somewhat leisurely, away.

* Length $10\frac{3}{4}$ inches, expanse 17, flexure $5\frac{1}{4}$, tail $2\frac{1}{8}$, rictus $2\frac{5}{10}$, tarsus $1\frac{4}{10}$, middle toe $1\frac{5}{10}$.

The present season (1846-7,) seems to be more than usually favourable to the influx of the migrant *Grallæ* from the north. Mr. Hill mentions, in a recent letter, that a friend, R. Wilkie, Esq., bagged twenty-two brace of Snipe in one day's shooting, in October.

Other *Scolopacidæ* that have been observed in Jamaica are the Knit (*Tringa Canutus*), the Sanderling (*Calidris Arenaria*), the Willet (*Catoptrophorus semipalmatus*), and the Little Woodcock (*Rusticola minor*). These I have not seen, but the first three, Mr. Hill writes me, are plentiful there, this winter. A second species of Woodcock, also, has been reported to have been met with in the island.

FAM.—RALLIDÆ. (*The Rails.*)

CLUCKING-HEN.*

Aramus scolopaceus.

Ardea scolopacea,	GMEL.—Aud. pl. 377.
Rallus ardeoïdes,	SPIX.
Rallus gigas,	BONAP.
Aramus scolopaceus,	VIEILL.

THIS curious bird, which, from its anomalous formation, has been a subject of considerable interest to ornithologists, seems to be much better known by its form and plumage, than by its habits. I am glad to be able to give some particulars of its history from my own observation, as well as from that of my friend, Mr. Hill.

The Clucking-hen derives its provincial name from its ordinary voice, when ranging its mountain solitudes. One day in August, I was col-

* Length 25 inches, expanse 39½, flexure 13, tail 5, rictus 3$\frac{2}{10}$, bare part of tibia 2, tarsus 4$\frac{3}{10}$, middle-toe 3$\frac{3}{10}$.

Irides hazel; feet dull grey, front of tarsi and toes blackish, polished; beak grey, blackish at tip, tinged with flesh-colour at base; tongue ending in a long horny point; no naked skin on head. General plumage brown, each feather marked through the centre with a pointed pencil of pure white. On the crown the hue is dusky, the centres being merely paler; on the neck the centres are large, and give the prevailing hue; it is on the fore-back and wing-coverts that the centres assume their beautiful form and distinctness. The quills, greater coverts, loins, rump, and tail, are destitute of white centres. On the inner wing-coverts, the breast, belly, and thighs, the brown is dull, and the centres large and well

lecting mosses on the Bluefields Peak, where it is densely covered with tall but slender wood, when Sam called my attention to this bird, which we heard walking at a little distance, around us, crackling the dried sticks and stones, and clucking deliberately with a voice exactly resembling that of a sauntering fowl. I sent the lad round to drive it gently towards me, while I remained still; and presently I saw it walking swiftly to and fro, but a few yards distant. While Sam was pursuing it it rose to wing, and alighted again immediately; but soon ran into the recesses of the woods beyond reach.

The negroes often assured me that a precipitous gully, that cleaves the mountain behind Bluefields, thickly clothed with large timber, abounded with these birds, but it was not until February that I obtained a specimen. At that time the parching drought having wasted the mountain pools, I was told that Clucking-hens might be met with in numbers, at the edge of the woods around the spot where the spring of Bluefields River gushes out of the mountain's foot. It was said that many

marked; the edges of the feathers loosely webbed. On the cheeks, the markings pale and indistinct; chin impure white. The brown of the back, wings, and tail is of an exceedingly rich deep hue, very silky, and displaying an iridescent glow of purple, like that of shaded silk. Wings short, third, fourth, fifth, and sixth quills, equal. First quill short, sickle-shaped; the outer web attenuated, and the inner dilated, towards the point. Tail broad, rounded, of twelve feathers. Under tail-coverts, large, nearly reaching the tip. Claws obtuse. Beak slender, upper mandible curved, blunt at tip; lower mandible straight; both rounded at edges; the *rami* of the lower soldered together at about half the length, where the cavity is nearly obliterated. The mandibles do not close accurately. Nostrils perforate.

were in the habit of selecting high trees in that vicinity as roosting-places. My servants having on several evenings heard the loud cries of these birds proceeding from the spot, I sent them thither one evening to watch. As night drew on, the birds were seen and heard around, and though they could not obtain a shot, they succeeded in getting a more definite knowledge of the individual trees selected.

An evening or two afterwards, I myself went to the spot with them; before sunset the loud cry of one was heard, apparently descending the mountain, but it was not until the grey twilight was fading into darkness that we began to hear them screaming and flying around. The notes were singular; sometimes a series of shrill screams were uttered in succession, then a harsh cry, *krau, krau, krau, kreaow.* All were loud, sudden, and startling. More than one alighted on a large hog-plum not far off, a tree which they seem to affect, but were too wary to allow of my approaching within gun-shot. Sam, who was watching a hundred yards distant, was more fortunate, for as I was stealthily creeping towards my bird, I heard the report of his piece, and had the satisfaction of learning that he had secured his game, the first specimen of this interesting bird that I had an opportunity of examining.

The ordinary spring-rains were distressingly deficient in 1846; and hence I presume it was, that, through the month of April, several birds of this species were in the habit of frequenting the morasses

on each side of the swiftly-flowing Paradise River. Where the bridle-path called the Short Cut crosses the stream, there grow many bushes of Black-Withe, about as large as an ordinary apple-tree; many of these are clothed with a dense and matted drapery of convolvolus so thick as to hide the bush completely. On the very summit of these bushes, the Clucking-hens might often be seen at early day, the tangled creepers affording a support for their broad feet, where they stood and turned without sinking and without embarrassment. They stood boldly erect, as if watching, their dark figures relieved against the sky, in an attitude exactly like that of an Ibis, though they flirted the tail in the manner of a Rail. At brief intervals they uttered a short sharp sound, and sometimes the loud harsh scream, *krēaow*. On being alarmed, they flew heavily and slowly, with the long legs hanging down, and the neck stretched forward, having a very awkward appearance in the air.

About June, they had again retired to the loftier elevations: at the middle of that month, I used to hear their loud cries at an early hour, on the mountains of Grand Vale and Hampstead, above Content. There was a large pond just within the woods, to which they resorted; for the drought still prevailed. My young friend, who had often seen them there, informed me that they scratch and pick like a fowl.

The head and beak of the Clucking-hen bears an obvious resemblance to those of the following

species, *Rallus longirostris*, except that the nasal grooves are nearly obliterated in the *Aramus*. The feet also are similar. The sternum is that of neither *Rallus* nor *Ardea*, but is closely like that of *Psophia*.

A female was brought me on the 1st of April, in the afternoon, which had been just shot as it was standing in shallow water at Bluefields river-head, fishing. The freshness of the subject enabled me to examine it carefully. The stomachic sac consisted of a gizzard separated by a narrow constriction from a long proventriculus, about twice as large as the gizzard, and of a sub-oval, flattened form. This was divided by the structure of the parietes into two very distinct parts, the upper portion being much thickened, and studded with small round glands, so as to look like shagreen. The lower and larger portion was muscular, the inner surface having longitudinal *rugæ*. The gizzard was comparatively smooth within, and thinner than the proventriculus. The latter was stuffed with small water-snails *(Ampullaria)*, divested of the shells, but not, in all cases, of the opercula, which filled even the œsophagus almost to the fauces. In the upper part of the proventriculus, the snails were little changed; in the lower they were macerated and more slimy, but in the gizzard there was nothing but a hard mass of blackish, almost homogeneous matter, nearly dry by the expression of its moisture. The intestinal canal measured fifty inches; (in another specimen forty-two inches;) about an inch from the cloaca, the

cæca branched off, the left longer by half an inch than the right. I could find no gall-bladder. The body, when divested of the integuments is compressed, but not so decidedly as in either Herons or Rails.

In the male bird the trachea at the distance of about two inches above the furcula, takes an immense convolution, forming a complicated knot; the form of the turnings is not always the same, nor is their extent; I have seen one much more complicated than in the specimen dissected by Mr. Eyton,* and some less so. The volutions are connected by a mesentery. At the point where the bronchi divaricate, the trachea dilates into a large oval box. In the female the trachea is quite simple, having no trace of the convolution, nor of the bronchial box. I hence infer that the loud startling cries are uttered only by the male. As in the Rails, the abdominal viscera are very large; the cæca in particular, when distended, are enormous.

Robinson states that the Aramus feeds upon snakes, toads, and lizards, as well as wood-snails, and gully-crabs, yet not on his own observation, but on the authority of "people of credit, who have seen junks of undigested snakes and lizards taken out of their craws." This is not confirmed, however, by my own observation, gasteropod mollusca having been found in every specimen I have examined. Mr. Hill's observation does not confirm the former statement. Of one which was

* Ann. and Mag. of N.H., Jan. 1846.

sent to him in July 1842, he remarks, "Having opened the craw for the purpose of ascertaining the food it had been eating, I found nothing but a quantity of a dark pulverulent substance, very much resembling decayed wood; a substance which a bird with such a bill as the Clucking-hen has, might be supposed to pick up with the worms it might find in the decaying wood. There was no trace of any animal body, neither wings of beetles, nor vertebræ of lizards." It may be added that this specimen when discovered, "flew from where a limb of rotten log-wood had been broken off; perhaps it was eating some of the large wood-worms."

Mr. Eyton's bird was sent from Honduras: if it had been a Jamaican specimen, I should have guessed that the zoophyte which seemed to resemble a sea-anemone, was a large species of *Vaginulus* common in the mountains.

From the general, though not total, absence of the shells of the snails which I have found, I judge that the shell is crushed with the beak, and shaken off before the snail is swallowed. The opercula, which are frequently found attached, have enabled me to recognise the genera *Ampullaria*, *Cyclostoma*, and *Helicina*; the latter two, terrestrial snails.

The piercing cries with which the Clucking-hen salutes the approach of night, are little heard at any other time: during the day it more commonly emits the deliberate clucking above mentioned, as it saunters hither and thither in the mountain-woods, or among the cocoes of the provision-grounds.

We sometimes hear the harsh sounds proceeding from the forest, even after night has established its dominion, and hence, probably, it has been considered a nocturnal bird; I suspect, however, that these cries are not the accompaniments of activity, but the harbingers of repose, emitted while sitting on the roosting tree, or while flying to and fro in preparation for alighting; the cries which are heard at a rather later hour marking, probably, the awaking from the first sleep, as they soon relapse into silence.

In the woods of the parish of St. David's these birds are said to be abundant, as also in the mountainous districts of St. Ann's, St. Dorothy's, and the Coona-coonas. Swift of foot, if not of wing, the Aramus does not confine itself, however, to one or two localities, but ranges, with rapid sidelong strides, the lonely woods from the mountain-tops to the mangrove morasses of the shore. Solitary and shy, it is a difficult bird to approach, but when obtained is esteemed by some as "the best wild-fowl of the country." "The flesh of this bird," says Dr. Chamberlaine, "acquires, about the termination of the year, that plumpness, which gives it a claim to be placed in the catalogue of edible birds. It is then esteemed fit for the table, and may be dressed in two ways; viz., in fricassée, or roasted like the Guinea-birds, and smothered, after being cut up, in a rich salade." Mr. Hill observes of the specimen which came into his possession; "I directed the whole of the muscles on either side of the *sternum* to be cut out and cooked. I

found its flavour indescribably fine, a compound of hare, partridge, and pigeon. The flesh was of peculiarly close and compact texture, and as peculiarly tender." I would add to these, my own testimony to its excellence.

Of its domestic economy, I know nothing, except that Robinson asserts, that "it lays nine eggs in December." In February, I found eggs in the ovary of a female, as large as small peas: another, in June, had about half-a-dozen a little larger than peas, about a dozen as large as pigeon-shot, and many small.

Mr. Hill, in a letter written since my return to England, informs me, that "for the last month of the late drought, [summer of 1846] numbers of Clucking Aramuses made their appearance about the river-swamps and marshes in the Caymanas district of this parish. They were a bird almost unknown in these plains. As slugs and snails were very plentiful in these, the only moist places at that time, we perceive what the attraction to this locality was, that brought them so numerously together, beside the desire for water."

The Clucking-hen was among the birds sent from Cuba by Mr. Mac Leay.

MANGROVE-HEN.*

Rallus longirostris.—LATH.

Pl. enl. 849.

THE reader shall be introduced to the bird before us, by the delightful pen of my friend, Mr. Hill.

"14th of March, 1842. I have visited Passage Fort at a season when Wild-ducks are stretching from one side of the Bay to the other in strings, and Plovers and Sandpipers are feeding in little flocks on the beach. The nights and the mornings are quiet, but the day is one uninterrupted bluster of the sea-breeze. The country is dry. Many of the large trees are leafless, and there is no verdure in the grass. Such a picture would seem to afford no great diversity for amusement: the sea, however, is always an interesting object. Whether calm or stirring it has a variety of features, all different at different hours of the day. The repose of morning; the slumbering ocean; the sleepy mountains kerchiefed in clouds; the awakened daylight peeping through the curtains of night; the birds just risen and moving; the little flocks wending about as if the day had its business to attend to; the Herons and Egrets shaking their wings by the mirrory waters, and making their toilet

* Length 15¼ inches, expanse 20½, flexure 5¼, tail $2\frac{4}{10}$, rictus $2\frac{6}{10}$, tarsus $2\frac{4}{10}$, middle toe $2\frac{3}{10}$. Irides hazel.

there. All this is a pleasant mixture of repose and activity; of the stir from sleeping to waking; in which nature is never seen to such advantage, as in the magnitude of a view that mingles the ocean with the earth.

"The day is gathering brighter and brighter; but the mountains rise between me and the sun, and are one dull blue mass, neither deeply nor faintly blue, but clear, and yet obscure. On the beach the fishermen are silently hauling their seine, sweeping, with its line of dotted corks, such a circuit on the waters, that it seems to take in half the bay. At a distance off, the flats loaded with grass are getting under weigh. Busy men and women are on the beach launching canoes and preparing for the market. The sails are hoisted, and the masses, that lay like logs upon the water, just stir, and glide out into the glaring bay. Amid all this hushed movement, there is one pervading sound, the murmurs of the distant breakers. This voice is seldom silent; in the stillest lull there will be heard this roll of the restless surge.——There is a sweet melancholy voice that comes from the bordering mangroves along the river: it is the morning call of the Pea-dove. It is responded to by a faint low cooing from the hill-side woods. It is repeated again and again; and again it is replied to far away. And now there are other sounds. The Crotophagas are trooping to the river-shallows, and calling to each other to settle among the sedges, where the receding tide has left them living food. There is a sound overhead like the

hurtling of arrows. It is a flock of Wild-ducks flitting from the Salt Island ponds to the Lagoons on the other side the bay: and again there is another sound of gathered tribes moving through the air. It resembles bubbling waters. It is a flight of Tinklings shifting from their rookery to their feeding grounds in the morasses. Streams of smoke are curling up from various points of the mountains, like the morning sacrifices of hill-worshippers of old. A shower has scudded along the loftiest of the ridges and shown the deep indentings of the elevated country, by the different depths of the misty haze.—It has passed away, and the heights are now lighted by the full blaze of the uprisen sun. The clouds cast deep shadows on the mountain declivities, and the highest points of the chain pierce through the masses, rolling one upon the other, thick and accumulated.

"The sea-breeze is in. It comes as no other breeze comes, and feels as no other breeze feels. At first two or three whiffles make darkened tracks on the glassy waters. Then half the sea afar off is covered with ripples. The ripples come creeping on, and the wind has reached the shore. Two minutes pass, and a line of small breakers are chasing each other on the beach. From this time the constant wind never lulls, but sweeps with 'a steady unrelenting force from the bright east.'

"Noon. In a small stretch of marsh land, through which the river has cut two or three channels, and left several smaller meandering dykes very clear and open, with pools and little lakes shut

in from the sea by sand-banks, there is a good deal of rank grass (*Digitaria stolonifera*) growing, on which the village goats congregate to feed at mid-day, that being the time when the ground is least swampy. Among the sedge and bulrushes that cover the flooded parts, at the same noon-tide hours, the *crek, crek, crek,* of the Water-rail is heard, with that kind of impatient reiterated sound, with which Guinea-fowl call to each other. This call is a summons for the birds to quit the sedges, and seek the muddy shoals and half-dry ooze, to feed. Two or three birds nearly, if not quite, as large as half grown pullets, of a dingy ash-colour, come over a low intervening wall where I am, and feed in the open yard. The country people call this bird the Mangrove-hen, from its appearance, its habits, and its haunts. It greatly resembles the dappled grey variety of the common fowl; and in the breeding season it rambles about with its callow brood, like a hen and chickens. After one of these visits, I went and traced the footmarks in the mud, and found that the Mangrove-hens had been searching for small crabs. Worms, shell-fish, insects, and crustacea are its animal food, and the seeds and shoots of aquatic plants, its vegetable. As the rank-growing herbage is necessary for its concealment, and creative wisdom has adapted it, like the rest of its tribe, by an extraordinary expansion of the foot, for walking on weedy waters, and so compressed its body that it threads with alacrity reeds and rushes; the mangrove thickets, which it commonly haunts, are those

that grow in tide-waters, and at the mouths of rivers, and in neighbourhoods luxuriant in aquatic herbage. These are the prevailing thickets at Passage Fort: I therefore find every body there familiar with the Mangrove-hen. As these birds have much of the character of the *gallinaceæ*, and are able to run and feed themselves as soon as they are hatched, they are, when half grown, as helpless on the wing as half-fledged poultry. At the pullet age, when feeding out on the mud and shoals, they are run down with great facility. At this time they are delicious eating. Persons, on whose taste I can depend, tell me, that, though a Plover be undoubtedly a fine bird for the table, and the Sanderling a great delicacy, the Mangrove-hen exceeds both; as it combines all their peculiarity of flavour with the fleshiness of the Quail. This is no small commendation."

To this interesting note, I have little to add. At Crabpond, where rounded clumps of mangroves are scattered like islets in a lake, we have observed it frequently running quickly and timidly from one cover to another, exposing itself in the open pond as little as possible. As it walks under the arched roots, it holds its short tail nearly erect.

In a specimen dissected in December, I found fragments of crabs; and a large one, nearly whole, was in the craw: the stomach is a muscular gizzard. This individual was excessively fat.

One brought to me alive in May, taken in a springe, bit fiercely and pertinaciously at anything

presented to it, shaking it like a dog. It uttered in rapid succession the most deafening screams.

The long beak, and the spurs upon the winglet, distinguish this species from our other Rails.

RED RAIL.*

Water Partridge.

Rallus concolor.—MIHI.

THE gallinaceous form common to the Rails, and the red hue of this species have given to it the provincial name of Water Partridge. It affects fresh-water morasses, and secluded streams, rather than saline swamps, and is found even on the mountain acclivities. I have shot it skulking among the aquatic weeds at Basin Spring. As it roams, it utters at intervals of a few seconds, a *cluck*, like a hen. The remarkable thinness of body, common to all this tribe, beautifully adapts them for making their way through close herbage.

It is sometimes seen perched on a low tree by the road-side, at which time it seems to have lost its usual shyness, and sits looking at the sports-

* Length 10 inches, expanse 15½, flexure 4 8/10, tail 2, rictus 1 1/20, tarsus 1 9/10, middle toe 1½. Irides vermillion; beak yellowish-green, blackish above; feet dull purplish-crimson, or pink. Plumage reddish-brown, dark on back and wings; brighter and redder on sides; paler and more ashy on belly. Wing-quills blackish.

man until he nearly comes up to it. Its flight is singularly ineffective; slow, heavy, and laboured; the head is projected, and the body hangs down, as I have seen the body of some unwieldy *Bombyx*, distended with eggs: the feet also are pendent.

I have never found in the gizzard of the Red-Rail, (which though small, is muscular) anything but a homogeneous cream or mud of a dark brown hue; or a green mucus.

The flesh is pale and flabby; the fat of a rich salmon-red.

A specimen sent to Mr. Hill by Dr. Hay from the neighbourhood of the Black River, in St. Elizabeth's, illustrated, in the manner of its capture, the habits of the genus. The Doctor observed, while standing on the steps of the house at Elim Estate, this Rail sauntering through the grass. He pursued it, and ran it among some oleanders that grew in clumps about, and succeeded in getting it. When brought into the house, the bird shot rapidly across the floor, and getting into a darkened corner of the room, remained quiet there, believing itself concealed. On being driven out from that hiding-place, it again scudded away over the floor to another dark corner, in which it remained quiet as before. These recesses seemed to represent the dense coverts in which it ordinarily conceals itself in apprehended danger; its reliance on which, doubtless, made it so easy a prey to its captor's hand, when it had taken refuge among the stems of the oleanders.

STRIATED CRAKE.*

(*Carolina Rail.*—WILS.)

Ortygometra Carolina.

Rallus Carolinus, LINN.—Aud. pl. 233.
Ortygometra Carolina, LEACH.

THE only specimen of this bird that I possess was shot among the reeds in Salt Spring morass, near Black River, the habitation of incredible numbers of these and similar birds. It was near the end of November. Though it slightly differs from Wilson's description, in the buff hue of the vent being scarcely noticeable, I conclude that it is of his species; the rather, since Mr. Hill has procured a specimen from Passage Fort, in which the buff hue was conspicuous. His specimen was obtained in March. It is probably a winter visitant from the United States, where Wilson describes it as an abundant species.

In the stomach of that which I dissected, I found only mud and coarse siliceous sand.

Le petit Râle de Cayenne of Buffon, (Pl. enl. 847) is probably a female of this species.

* Length 9 inches, expanse 13¾, flexure 3$\frac{9}{10}$, tail 1$\frac{8}{10}$, rictus $\frac{9}{10}$, tarsus 1½, middle toe 1¾.

MINUTE CRAKE.*

Ortygometra minuta.

Rallus minutus, var. β, LATH.
Ortygometra minuta, LEACH.

In travelling from Bluefields to Savannah le Mar, we save about two miles by taking what is called the Short Cut, a bridle-path through the deep matted woods. The trees are largely sweet-wood, tangled, near the edges of the broad morass, which occupies so much of this plain, by spreading bushes of black-withe and cockspur. Two streams are to be forded, the one a sluggish water that crosses the path immediately on our entering the woods, the other is the deep and rapid Sweet River. After

* Length 6 inches, expanse 8$\frac{6}{10}$, flexure 2$\frac{7}{10}$, tail 1$\frac{8}{10}$, rictus $\frac{7}{10}$, bare portion of tibia $\frac{8}{10}$, tarsus 1, middle toe 1$\frac{7}{20}$. Irides brick-red; beak dark olive, edges at base paler green; legs and feet clay-colour. Forehead, crown, and occiput black, softening at the sides and nape; a black band from rictus passes through the eye, above which is a band of white, interrupted by black immediately over the eye. Sides of head and neck, yellowish-ash, blending with the black. Back, shoulders, scapulars, and loins yellowish-umber, each feather deepening in the centre to dark brown, with a conspicuous stripe of pure white running through the middle of the terminal half. Wing-coverts yellowish-brown; the greater coverts and the tertiaries have dark centres, and terminal white spots. Primaries and secondaries greyish black. Tail coverts black, with broad spots and tips of white; tail as the tertiaries. Chin, throat, and whole under parts white, slightly tinged on the breast with buff. Sides, flanks, under-tail-coverts, and outer part of thighs, marked with transverse bands of black and white.

pursuing for more than a mile the track through the bush, which here and there opens on each side into secluded grassy glades, adorned with many flowers, and haunted by gay butterflies, the gradual predominance of marsh plants, *sagittaria*, ginger-fern, bulrush, and black-withe, to the exclusion at length, of every thing else, warns us of our approach to the river, and at length we come suddenly upon it in all its beauty. Emerging darkly into view from beneath overhanging trees on the right, upon which is spread a thick drapery of convolvuli, whose lovely festoons, gemmed with purple and green, depend to the very surface of the water, the stream gurgles along a pebbly bed, or here and there glides with treacherous smoothness over quicksands hidden by the waving tresses of the dark green *equisetum;* and is presently lost again in the meandering of its tortuous course through the bushes.

Many sorts of water-fowl haunt this darkling stream: scarlet-fronted Gallinules, that were feeding at the edge, alarmed at our approach, flutter along the surface with much splashing of the water and laborious flapping of their wings, to seek concealment; while the less timid, but more beautiful Sultana bridles its purple neck, and peeps at us from the shadow of the overarching withes, or walks calmly away over the shallows. The harsh scream of the Little Bittern comes fitfully from the reedy morass, and the cry of the Clucking-hen from its watch-post above; the little Squat-ducks are diving in the eddies of the stream, the Blue Kingfisher

darts across with his rattling call, while the snowy form of the White Gaulin is seen in the distance, relieved against the dark bushes, as it drags its heavy flight across the swamp. All the while gushes of rich melody are pouring from the throats of a dozen Mocking-birds around, soothing us as we recline on the soft beds of thyme that profusely cover the bank and fill the air with delicious fragrance.

It was in this situation that Sam found the little Crake before us, on the 30th of March. It was at first standing at the edge of the stream, whence it ran up the large marsh-fern, vulgarly known as Wild-ginger, and peeped from among the fronds, until the lad shot it. It was a male. I found in its stomach, which was not very muscular, merely a little yellowish mucus, and some small gravel. We never met with the species again. I suspect, however, it is a permanent inhabitant of the morasses; but the impenetrable character of these sombre and fœtid recesses, renders an acquaintance with their inhabitants very difficult. The swiftness of foot, and the retiring habits of most of these birds, as well as their nocturnal rather than diurnal activity, add to this difficulty. The naturalist is often indebted for his knowledge of a species to "the fortune of the hour," more than to his own efforts. Hence, I have no doubt, many birds of this tribe, unknown to me, exist in Jamaica.

LITTLE RED-EYED CRAKE.*

Ortygometra Jamaicensis.

Rallus Jamaicensis,	GMEL.—Aud. pl. 349.
Ortygometra Jamaicensis,	STEPH.

A SPECIMEN of this little Crake was brought to me in April, alive and unhurt. It lived in a cage two days, but though I enclosed with it a vessel containing water and mud, with aquatic weeds in a growing state, and scattered on it crumbs of bread and pounded corn, it scarcely ate. Once or twice I observed it picking in the mud, but in general it would not even walk on it. Yet it was not at all timid. Its motions were very deliberate; slowly raising its large feet, and then setting them down, often without making a step. The neck was usually drawn in, short; and then it had little of the appearance of a Rail, but rather of a passerine bird; but when it walked, the neck was more or less extended horizontally, and now and then bridled up: the head was carried low. The throat was often in slight vibration, when standing still. I observed no flirting, nor erection of the tail.

On two or three occasions, I have seen the species. Near the end of August, pursuing a White Gaulin

* Length 6 inches, expanse $9\frac{3}{4}$, flexure 3, tail $1\frac{2}{10}$, rictus $\frac{7}{10}$, tarsus $1\frac{1}{10}$ (nearly), middle toe $1\frac{1}{10}$. Intestine $12\frac{1}{2}$ inches; two cæca, slender, one $\frac{1}{2}$ inch, the other $\frac{1}{3}$ inch, long.

in the morasses of Sweet River, several of these little Rails, one at a time, flew out from the low rushes before my feet, and fluttering along for a few yards, with a very laboured flight, dropped in the dense rush again. Their manner of flight, and their figure greatly resembled those of a chicken; the legs hung inertly down. I saw another in February, by the border of the River at the Short Cut, flying with the same feeble and laborious motion, from one tuft of herbage to another, whence it would not emerge till almost trodden on.

I have not heard it utter any sound; but Robinson, in describing two that were brought to him alive in October, 1760, says, "their cry was very low, and resembled that of a Coot, when at a great distance." He notices also their peculiar mode of flight, as well as their habit of squatting. "Several," he observes, "were killed accidentally, by the negroes at work; as they are so foolish as to hide their heads, and, cocking up their rumps, think they are safe, when they are easily taken." (MSS. iii. 112.) He says elsewhere, "The negroes in Clarendon call it *Cacky-quaw*, by reason of its cry, which consists of three articulations; the negroes in Westmoreland call it *Johnny Ho*, and *Kitty Go*, for the same reason." (iii. 134.)

The gizzard of the one that I examined, contained a few hard seeds. The body is much compressed.

The speckled plumage, rufous neck, and scarlet eyes, constitute this a species of much beauty.

SULTANA.*

(*Martinico Gallinule.*—WILS.)

Porphyrio Martinica.

Gallinula Martinica,	GMEL.—Aud. pl. 305.
Gallinula cyanocollis.	VIEILL.
Porphyrio tavoua,	Ibid.
Porphyrio Martinica,	G. R. GRAY.

THIS magnificent bird is not uncommon in some of the lowland ponds and marshy rivers of Jamaica. The road from Savannah le Mar to Negril, passes through the immense swamp of the Cabarita River, the tall and dense rushes of which form a wall on each side of the way, which in the wet season is overflowed. Riding there one day in January, I saw a Sultana walking in the middle of the road; a horseman had passed an instant before, who certainly had not disturbed it; and on my approach it took no more notice than a common fowl, sauntering about, and picking here and there; allowing me to come within three or four feet of it. I stopped and gazed at it, and at length made a noise and a sudden motion with my hands; but it merely half-opened the wings, and gave a little start, exactly as a chicken would do, but

* Length 12½ inches, expanse 21½, flexure 6½, tail 2½, rictus 1$\frac{3}{10}$, breadth of shield $\frac{9}{20}$, height from base of lower mandible to point of shield, 1 inch, tarsus 3, middle toe 3. Hind claw largest.

neither flew nor ran. I never saw a bird, *feræ naturæ*, so tame.

I afterwards found that this vast morass abounded with them, and that their presence in the high road was a thing of daily occurrence; and though I never saw them *quite* so fearless as the one I have mentioned, still they were very bold, walking out from the rushes and strolling across the road in the sight of passengers.

The aspect of the living bird is not that of a Gallinule; it stands high on the legs, which are placed more forward: its air is much like that of a fowl, but its contour is much slenderer. As it walks, the neck is bridled up, and thrown forward alternately, and the short black and white tail, which is semi-erect, is, at every step, flirted up with a jerk into a perpendicular position.

I was struck with the remarkable elegance of one, that I saw by the roadside, about mid-way between Savanna le Mar and Bluefields. It was at one of those pieces of dark water called Blue-holes, reputed to be unfathomable. The surface was covered with the leaves and tangled stems of various water-plants, and on these the Sultana was walking, supported by its breadth of foot; so that the leaves on which it trod sank only an inch or two, notwithstanding that the bird, according to its usual manner, moved with great deliberation, frequently standing still, and looking leisurely on either side. As it walked over to where the water was less encumbered, it be-

came more immersed, until it seemed to be swimming, yet even then, from the motion of its legs, it was evidently walking, either on the bottom, or on the yielding plants. At the margin of the pool, it stood some time, in a dark nook overhung by bushes, where its green and purple hues were finely thrown out by the dark back-ground. I could not help thinking what a beautiful addition it would make to an ornamental water in an English park; and the more so, because its confiding tameness allows of approach sufficiently near to admire its brilliancy. Nor are its motions void of elegance: the constant jerking of its pied tail is perhaps rather singular than admirable, but the bridling of its curved and lengthened neck, and the lifting of its feet are certainly graceful.

That the Sultana could be easily domesticated is probable: Mr. Hill once kept one for three months, which fed eagerly on Guinea-corn (*Holcus sorghum*).

The immense length of the toes in this bird is a wise and beautiful provision for its support on the aquatic herbage, which usually covers the surface of standing waters in warm countries. Xenophon, in the Retreat of the Ten Thousand, if I mistake not, has mentioned a country, where they were in the habit of affixing hurdles to the horses' hoofs, to enable them to cross rivers without sinking. This device, however, could be available only on a weedy surface.

Robinson, who has a drawing of this species, says, "This is called the true Plantain Coot, by

reason of his great affection for that fruit." In describing what he calls the Carpenter Coot, which seems merely the present bird in immature plumage, he says, "It has its name from the noise it makes; it being customary for these birds to assemble, and knock against pieces of felled timber with their beaks, either in search of insects, or *to break the shells of the water-snails*, which are common in the ponds and rivers of these parts. The noise they make when thus busied has been not badly likened to that of carpenters at work. And I am deceived if the Clucking-hen makes not a like noise, and for a similar purpose. I have been since credibly informed they do. The Carpenter Coot lays in March, and has young in April." (MSS.)

On taking off the skin, one is struck to observe the bases of all the feathers projecting from the interior surface, to an extent seen in no other birds than those of this genus.

SCARLET-FRONTED GALLINULE.*

Gallinula galeata.

Gallinula chloropus,	BON.—Aud. pl. 244.
Gallinula galeata,	LICHT.

BY a confusion of terms this species is called in Jamaica the Coot, while the following is known by the name of Water-hen.

This bird is scarcely to be distinguished from the European Moor-hen, in appearance or in manners. It delights in any water where there is cover; sometimes a swiftly running stream, as Sweet River, where the bushes dip their branches into the water, or the margins are fringed with high weeds; but more usually large ponds, in which tall and thick bulrushes densely grow, or masses of the great ginger-fern. On approaching such a piece of water early in the morning, or at any hour of the day, if the place be unfrequented, we may see the Gallinules playing on the surface, some by their black plumage and scarlet shields, known to be females, the browner males less dressy, as becomes their sex, and some smaller and greyer, which are young. As they swim to and fro, they utter a loud *cluck* at short intervals; but on alarm each one sounds the note in a higher key, and

* Length 13½ inches, expanse 20½, flexure 6½, tail 2¾, rictus 1 $\frac{3}{10}$, breadth of shield ¼, height from base of lower mandible to top of shield 1, tarsus 2½, middle toe 3. Hind claw smallest.

the whole company dashes into the cover. Here they continue to call to one another; but if much pressed, they lie close, or conceal themselves in some way, so as to elude search even in a very small area; probably by keeping under water, holding on the roots of the rushes. But if the observer remain quite silent and concealed, in about half an hour the *cluck* is again raised, and they begin cautiously to re-emerge, and play at the margin of the reeds. I think the sense of sight is less acute with them than that of hearing.

One which I slightly wounded, on my carrying it by the legs, repeatedly turned up its head to bite; its force, however, was insufficient to break the skin, though it could pinch a little. Another in similar circumstances, I also found vicious in its attempts, though ineffective. On arriving at home, I wished to observe its manners in the water more closely, and for this purpose I fastened a cord to its foot, having bandaged it to prevent its being hurt or cut, and then let it swim in the pools of Bluefields River. Its first impulse was to dive, and then to swim along about a foot beneath the surface, which it did for a considerable distance, aiding its progress by striking out, not only the feet, but also the wings, which were expanded. It thus reminded me of a turtle. When immerged, the whole plumage was coated with a pellicle of air, which had a singular and beautiful effect. When it swam at the surface, little of the body but the back was exposed, and sometimes only the neck and head. It made constant efforts to

reach the weeds and grass at the margins, and if allowed to do so, crept in among them, and remained motionless. Sometimes, when thus retired, it put its whole head beneath the water, and remained still, so long that I feared it was drowned; but on being touched, it raised its head uninjured. It seemed unwilling to walk; perhaps because its legs were stiff, from having been held in the hand; on a boarded floor, it could only shuffle along on its belly: and on the turf, it seemed capable of maintaining a walking posture only as long as its motion was rapid; the moment its speed abated, its breast came to the ground, owing to the backward position of its legs. Its fœcal discharges, when first secured, were a thin black mud, but afterwards were merely a clear water, slightly tinged with green.

The belly in these birds is always protuberant; the intestines being both very long and very large; the cæca are also enormous. The stomach, a very large and muscular gizzard, is usually filled, as well as the craw and intestine, with a greenish earth, which under a lens is seen to contain much organized matter, as minute seeds, decaying leaves, &c. From the circumstance of an excessive quantity of matter being taken into the stomach, containing a comparatively small proportion of nutritive substance, we see the need of the digestive organs being both capacious and lengthened.

The young of the season have the legs and feet of their full size and development, while the feathers of the wings are only beginning to protrude;

showing how subordinate the organs of flight are to those of swimming.

Early in December we found an egg in Mount Edgecumbe pond, undoubtedly of this species, for no other large bird frequents it. It was larger than a hen's egg, but more regularly oval: and appeared to have been of a pale blue tint, but covered with a coat of white chalky substance. It was lying on some crushed reeds at the surface, but evidently had been floating a long time, for it was discoloured, and the contents were coagulated by decomposition.

CINEREOUS COOT.*

Fulica Americana.—Gmel.

Aud. pl. 239.

In the immense morass behind Savanna le Mar, the dense rushes afford shelter to innumerable aquatic birds, among which one may recognise, even at a distance, the Sultanas by their graceful air and slender form, the Gallinules by their scarlet shields, and the Coots by their conspicuous ivory beaks. In the broad spaces of open water, which here and there margin the reeds, as at Radonda,

* Length 15½ inches, expanse 27¼, flexure 7¾, tail 2$\frac{1}{16}$, rictus 1$\frac{4}{16}$, height of shield from base of lower mandible 1, tarsus 2¼, middle toe 3$\frac{4}{16}$, width of middle membrane $\frac{9}{16}$.

they may be seen at all hours of the day, if undisturbed, hundreds congregated within an acre. Wary, however, to an excess, the distant sight of a man, or the snapping of the twigs beneath his tread, alarms the whole, and away they flutter into the covert, splashing the surface as they go. Yet the noise made by the cattle walking on the shore, or trampling and munching the reeds, as they wade breast-high, has no such effect. The best way to shoot them is to lie very quiet, if the musquitoes will allow you, behind a bush, and take them as they come out, sometimes two or three at a shot; or else to wade in among the reeds, and bring them down as they rise; though sometimes you cannot flush them. A good water dog is indispensable to success.

As far as my observation goes, the white shield is the mark of mature age: in the young it is dark brown; I have not seen any with the shield wholly white, the upper part still being brown. After having been carried head downward for some time, I found the beak of one, instead of white, livid purple, as if filled with blood. The stomachs usually contain small seeds, and decaying vegetable matter mixed with mud and sand.

FAM.—RECURVIROSTRADÆ. (*The Avocets.*)

ROSEATE STILT.*

Himantopus nigricollis.

Recurvirostra himantopus,	WILS.—Aud. pl. 328.
Himantopus nigricollis,	VIEILL.

THIS beautiful and singular bird first fell under my observation in December. It was wading in the water of Crab-pond, picking from the mud at the bottom, with the beak, the water reaching not quite half-way up the tarsus. It did not feel with the beak in the manner of the Snipe, but struck at the prey that caught its eye, as it walked with the head erect. The statement of Cuvier that walking is painful to this bird, is as contrary to fact as to reason. This specimen was walking in the shallow firmly enough; and even when shot in one leg so as to break it, it stood for some time on the other in a firm erect attitude, the broken limb being held up and dangling.

Three were shot at Bluefields Creek on the 1st of May, in the evening, out of a large flock that were wading on the little bar at the mouth,—and were brought to me. One which had the wing broken was alive, and otherwise unhurt. It

* Length 14 inches, expanse 26¾, flexure 8½, tail 2$\frac{9}{10}$, rictus 2$\frac{7}{10}$, naked tibia 3, tarsus 4½, middle toe 1$\frac{7}{10}$. Intestine 12 inches, two cæca attached by a mesentery, 1 inch long, 1½ inch from cloaca.

ran actively enough, without the slightest vacillation, taking long strides; but when it was on its belly, it could not get on its legs without help, sprawling about with opened wings: it is quite likely, however, that this was owing to one wing being rendered useless, for in attempting to rise, I perceived, it always tried to balance itself by opening and extending horizontally the wings. Probably this is the compensation given to it by the Allwise Creator, for the want of purchase which must be felt in raising the body at the end of levers, so long and so slender as the legs. It frequently stopped abruptly, essayed to go on, and stopped again, in that hesitating manner common to the Plovers; and like them it often jerked the head up and down. Its usual attitude, when standing still, was with the neck shortened, so that the head projected from between the shoulders, the beak pointing obliquely downwards, and the hinder parts of the body a little elevated. Now and then it lifted one foot, and held it dangling behind the other for a few seconds. Once or twice I saw it pick at the floor, and probably it took a small insect. Its cry, which was uttered once or twice, was a short *clank*, loud, harsh, and abrupt. I cannot by any means agree with Wilson, that this bird manifests no resemblance to the Plovers.

The stomachs of these contained a few small shells, *Turbo* and *Nerita:* two which Robinson dissected contained "a kind of *Cornu-ammonis*," probably *Planorbis*. He notices also, what I have not seen mentioned in print, but which was con-

spicuous enough in my specimen, a beautiful rosy blush on the white of the neck and breast; but only in the male. The females had eggs in the ovary at this time, (1st May) as large as pigeon-shot. They were all very fat, the fat being of a deep yellow hue.

Mr. Hill has favoured me with the following notes on this species: "In addition to the extraordinary length of leg of the *Himantopus*, it has been asserted that its leg-bones are as limber as a leathern thong, and that they can be bent up without being broken. The accurate Wilson has made this statement. I will not merely say that it is at variance with my experience, but that it is absolutely absurd. The bones of this bird are as rigid as those of any other. [To this I add also my own testimony.] The only peculiarity I observe in them, is a flatness in the make of the leg. While the measurement is a fourth of an inch one way, it is scarcely an eighth of an inch the other. The tendon that runs all along the limb is very large, and the skin that envelopes the whole leg very fleshy. A fleshy feeling of softness is *the only approach* to the leathery peculiarity so confidently spoken of. The bill has a trifling trace, almost imperceptible, of recuvature. It is very rigid. Out of sixteen or eighteen birds carefully examined, I saw only one with a very decidedly marked recurved character. There was another circumstance I observed, very worthy of notice; viz. that the length of the legs of no two birds was precisely the same. Nearly half an inch of difference was found between the

tibia and tarsus of the longest, and of the shortest specimens. [My own observation *fully* bears out this statement.]

"The birds brought me were shot while feeding in some shallow pools of water in the Salines at Passage Fort. They were wading deeply. They fed in small flocks, and winged about sportively, mingled with Sandpipers of the *Tringa cinerea* species. A variety of Teal were there also; and the Shoveler Duck (*Rhynchaspis clypeata*), a peculiar insect-feeder, being among them at the same time, makes us pretty distinctly acquainted with the food of *Himantopus*.

"In March 1842, I noticed several Stilt Plovers fishing breast-high in a lakelet at the mouth of the Rio Cobre, which I used to look upon from the window of the dwelling I stayed at, at Passage Fort. I saw some eight or ten together, when a Kingfisher was fishing at one end of the pond, and an Osprey at the other; the Kingfisher confining himself to the tranquil stream, and the Osprey to the broken waters, where the current of the river contended with the shoaling sea. I saw the Stilts there an hour together, beating breast-high over the pond. It was evident that their food floated on the surface."

My friend adds *Recurvirostra Americana*, as an occasional visitant of Jamaica.

ORDER.—ANSERES. (*Swimmers.*)

FAM.—ANATIDÆ. (*The Ducks.*)

RED FLAMINGO.*

Phœnicopterus ruber. LINN.

Aud. pl. 416.

THE dimensions given below are from a specimen shot on the beach at Negril, in March 1764; from the Doctor's description, it seems to have been scarcely mature. He adds, "I once saw a living one at Kingston. Its food was white bread steeped in water in a washing basin. In feeding, it immerged its upper mandible in the bottom of the basin, resting on the elbow or angle of that mandible, and by quick repeated motions, like those of a duck in the mud, sucked up the finest parts of the dissolving bread."

As I have never met with this beautiful bird in Jamaica, I am the more obliged for the following memoir from the pen of my kind friend, Mr. Hill. "I believe the Flamingo is never seen now upon our coasts, but as a solitary bird, or, at most, associated with three or four companions, when they make excursions in small groups, preparatory to pairing

* "Length from beak to toes extended 62 inches, expanse 57½, tail 5½, beak 5½, neck 23, leg [tarsus] 11, middle toe 3, hind toe ½."—(*Rob. MSS.*)

and breeding. The congregated flocks of the neighbouring islands disperse themselves; and stragglers appear upon the sand-bars at the mouths of our rivers, occasionally, in seasons remarkable for visits of the Hyperborean and the Canada Goose. We are best acquainted with them as inhabitants of Cuba. The waters between the thinly peopled shores of that island, and the clustered green kays of the coast, to which Columbus gave the names of the Gardens of the King and Queen, are low and shoaly. In these shallow seas, in adjacent swamps, in river-lakes, in marshes and lagoons, and salina-ponds, they are to be always seen moving in flocks, or flying and feeding in ranks of two and three hundred together. Their lengthened lines and red plumage have led the colonial Spaniards to call them *English soldiers*, a name not inappropriate to birds that marshal themselves under a leader, and regulate their movements by signals, when the remotest danger threatens; and obey the bugle-blast of their sentinel, when he summons the cohorts to the wing, and to betake themselves to other feeding-grounds.

"I visited the district of Boyamo on the south side of Cuba in the year 1821, and was on the coast from January to April. I was much among the marshes and swamps about the river Conta, a stream that receives the tidal waters, which here rise and fall six or seven feet, at fifty miles along its course. At the mouth of this river there are long stretches of shoal ground, where the floods of the river and the sea form lakelets, and successively deposit their stores of living atoms, with the rising

and falling tides. Here the Flamingoes flock and feed. They arrange themselves in *what seem to be lines*, in consequence of their finding their food along the *edges* of these shallows; and though it is true that whilst their heads are down, and they are cluttering with their bills in the water, they have one of their number on the watch, standing erect, with his long neck turning round to every point, ready to sound the alarm on the apprehension of danger,—what appears to be a studied distribution of themselves back to back, as some observers describe their arrangement, is nothing but their regardless turning about in their places, inwardly and outwardly, at a time when all are intent on making the most of the stores which the prolific waters are yielding.

"The vessel I was with on the coast of Cuba was loading timber. Our raftsmen brought us from Juanita, a town on the Rio Conta to which the tidal influences of the sea extend, a pair of Flamingoes. I was struck with their attitudes, with the excellent adaptation of their two-fold character of waders and swimmers, to their habits, while standing and feeding in the sort of shoal which we made them in a large tub upon deck. We were here able to observe their natural gait and action. With a firm erectness, like a man treading a wine press, they trod and stirred the mashed biscuits, and junked fish, with which we fed them; and plied their long lithe necks, scooping with their heads reversed, and bent inwardly towards their trampling feet. The bill being crooked, and flattened for accommodation to this reversed mode of feeding, when

the head is thrust down into the mud-shoals and the sand drifts, the upper bill alone touches the ground. The structure of the tongue, of which Professor Owen has given so minute and interesting a description, is admirably adapted for a mode of feeding altogether peculiar. The spines with which the upper surface is armed, are arranged in an irregular and alternate series, and act with the notches on the edge of the upper mandible, on which they press when the bird feeds with the head reversed. In this reversed position, the weight and size of the tongue becomes a very efficient instrument for entrapping the food. The bird muddles, and clatters the bill, and dabbles about, and the tongue receives and holds as a strainer whatever the water offers of food.

"When I made my notes of the Flamingo, I thought I had remarked what had hitherto been unobserved, respecting the ceaseless trampling of the feet while feeding; but I find Catesby has described it . . . A correspondent of Buffon's also, I perceive, communicated the same fact, with other incidents equally striking . . . .

"There is nothing of the Heron character in the Flamingo. Extraordinary length of neck and legs is common to both, but a firm erect posture is its ordinary standing attitude. The neck is never curved inward and outward, convex and concave, like a Crane's, but its movements are in long sweeping curves, which are peculiarly pleasing, when the bird is preening its plumage.

"The bar at the mouth of the Rio Conta stretches

some two miles and a half out to sea, with a narrow inlet about nine feet deep at high water. Here the Flamingoes, at the season when they associate in flocks, are congregated by hundreds. They feed divided into the lines I have explained already, and subdivided into companies. A scout on some advantageous point apart, where he may glance alternately at the lengthened reach of the river, and at the sweeping sinuosities of the coast, right and left, sounds his orders to the squadron. A sort of long-drawn trumpet-call is the signal of danger. At the warning to retreat, the whole troop rise on the wing crying and screaming. They fly in a stiff cruciform posture, with the neck extended swan-like, and the legs depending, but stretched behind so as to balance the flight. When thus suddenly alarmed, they rise to the height of the belt of mangroves that close in some neighbouring lagoon, and clearing the fringing woodland, drop within the impervious wilderness, and then feed no longer congregated, but dispersed about."

Robinson states that "the flesh is tough: they skin them and boil them. The broth is very good and rich. The fat of the bird being orange-coloured, like that of the Great White Curlew, gives it a very agreeable and rich appearance." The Doctor also observes, "The body appears *depressed, not compressed as the Ardeæ.*" (MSS.)

BLACK-BILLED WHISTLING DUCK.*

Dendrocygna arborea.

Anas arborea, LINN.—Pl. enl. 804.
Dendrocygna arborea, SW.

THE Whistling Duck is well known in Jamaica, by the singular note which has conferred on it its provincial name. This note uttered in its crepuscular flights to and from its feeding-places, and also when alarmed, is peculiarly shrill, and bears no small resemblance to the sound produced by blowing forcibly over the pipe of a drawer-key.

It is much dreaded by those who plant Guinea-corn; in February, when this grain is *in the milk*, the ducks in a compact flock dash forcibly into the corn, striking down a large breadth, on which they can stand, and eat the soft grain at ease. But for this impetus, they could have no means of reaching the panicle, from its loftiness; nor of bringing down the stalk with their beaks, from its firmness: nor, from its slenderness, would their arboreal habits avail them to perch on it. Numerous flocks of both young and old birds, frequent the millet-fields from December till the

* Length 21 inches, expanse 39, flexure 10, tail 3¼, rictus 2¼, tarsus 3¼, middle toe 2¾. Intestine 54 inches, two cæca, about 4 inches long. Irides dark brown; beak and feet iron-grey. Sexes exactly alike.

end of February, when this corn is reaped. They are most busy in their depredations on moonlight nights; and as they sweep round in circles, their remarkable whistle always betrays their movements.

The young are frequently taken, and brought up in the poultry yard with the tame ducks, either pinioned, or sufficiently subdued by kindness to be allowed liberty. These are always found to attract large flocks of their wild brethren to the farm-ponds, and are often preserved for that purpose. The tame birds, which are allowed to roam, even go to a considerable distance in search of the wild flocks, and bring them home. Some, with which Mr. Hill was familiar near Spanish Town, always led the whole flock of aquatic poultry, invariably marching at their head, when called from the pond to be fed, and when fed, returning in the same order to the water again.

A gentleman of Spanish Town informs me that the nest of this bird is usually at the foot of a mangrove, and that it lays eight or nine eggs. Robinson, however, gives it a different mode of nidification, having been informed by Mr. Thistlewood of Savanna le Mar, a copious contributor to his ornithological notes, that "the Whistling Ducks sometimes make their nests in hollow trees above thirty feet in height, and the hollows or cavities several feet deep, which makes him at a loss to know by what method the little ducklings either get up the hollow, or down the tree when up; but he thinks the old one must carry

them; and I believe this must be soon after they are hatched; for I cannot suppose she can carry food and water for them into such a place; it being not known that any birds of this kind ever feed their young. [See Wilson, on the Summer Duck.] However, I believe the young ducks may *jump* out of such a cavity; for a day or two after they have been hatched, they have been known to jump out of a barrel, and far above that height." (MSS. ii. 85.)

"The Whistling Duck endeavours to save her young, when pursued, by throwing herself into the man's way; that is, by rushing up so close to him as to draw his attention, that her young, who are very active, may have an opportunity of escaping. Accordingly, the man, seeing the duck so near him, looking upon her as a much better prize than the young ones, leaves pursuing the ducklings, and endeavours to catch the subtil dame, who runs before, but takes special care to keep out of his reach; yet stopping in front of him, occasionally, to make him renew the pursuit, till the young are entirely out of danger; when she flies away, leaving her pursuer to fret at his double disappointment. This I had from a person of credit, who affirmed that himself was thus deceived. The Whistling Duck is very hard to catch, if its wing only is disabled; and will outrun a man, if he be not very nimble.

"The Whistling Duck breeds numerous in the morasses of Westmoreland; in such places they remain all day, and in the evening disperse them-

selves over the ponds in the open plains to feed, till near morning, when they return. It is usual for people to watch for them in the evening, when they go to feed, and to shoot them. When the gunner hears them whistling in their flight, he imitates the sound, and thus lures them to where he is, and, of course, to their destruction. A duck and mallard with their young brood commonly fly together." (Rob. MSS.)

Mr. Swainson's conjectures that this is the male of the Red-billed species, (Anim. in Menag. p. 223.) and also that it is the female (Ibid. p. 224.) are both groundless. The Red-bill is perfectly distinct; and the sexes of the present species do not differ from each other. The difference in depth of the warm brown tint on the belly and chin is common to both sexes. The trachea is terminated by a trilateral bony capsule, where the bronchi divaricate. There is but one pair of tracheal muscles. The feet-webs are so concave, as to be little more than semi-palmate.

It is very common in Hayti, where its Indian name, *Iguasa*, is adopted by the Spaniards.

All Ducks are fond of shaking their tails and their feathers, but in the Whistling Ducks of both species, from their height, this is particularly conspicuous.

The Red-billed Whistling Duck (*D. Autumnalis*) though much less common in Jamaica than the preceding, is found there in some seasons, as an autumnal visitant from the Spanish-main. I have

seen several in a state of domestication, allowed to run in a yard at Kingston, but they had been imported.

GREEN-BACKED MALLARD.*

Anas maxima.—MIHI.

? *Anas boschas et Cairina moschata ;* hybrid.

I HAVE ventured to give a name to the magnificent Duck described below, notwithstanding the opinion of so high an authority as Mr. G. R. Gray, who, on inspecting my specimen, considered it a hybrid. Though I have the greatest respect for the judgment of that gentleman, I cannot feel quite free from doubt on the subject for the following reasons. At Radonda water, near Savanna le Mar, where my specimen was shot, it seemed

* Length 30¼ inches, expanse 42, flexure 12½, tail 5½, breadth of beak 1, height at base 1, rictus 2¾, tarsus 2¾, middle toe 3¼. Irides dark brown ; feet orange, front of tarsus, of middle and of outer toe, and claws, black ; beak blackish brown, with a bar of deeper hue. Head, chin, throat, and upper neck, deep velvety purple, changeable to sea-green. Lower neck and fore-back rich chocolate, with purple gloss, separated from the purple of throat by a demi-collar of pure white. Back, wings, rump, and tail deep purple brown, with brilliant green reflexions. Secondaries and scapulars rich metallic green ; the secondaries tipped with white ; primaries dull black ; first and fourth equal, second and third equal, longest. Breast deep chestnut, paling to greyish white on belly, sides, and vent ; the feathers on the upper belly and lower breast, black-disked. Sides and vent minutely pencilled with dusky ; under tail-coverts black, with green gloss. Weight 4¼ lbs.

well known to the negro gunners, who had been accustomed to call it *Wigeon*, and who stated that others had been lately (at the end of February) seen in the neighbouring waters.

Robinson was acquainted with this identical species, (or variety?) nearly a hundred years ago. "Mr. Thistlewood shot a Duck and Drake, which he called the Wild Muscovy Duck and Drake, *not on account* of their resembling those birds in colour, but in size, for the Drake equalled the Muscovy Drake, and the Duck the Muscovy Duck. The Wild Muscovy Duck, Mr. T. says, was covered with a most elegant, beautiful plumage, far surpassing that of any bird of this kind he ever saw." (MSS. ii. 86.) From an elaborate description and admeasurement, which the Doctor afterwards gives, I find the male *agrees accurately* with mine, save that its expanse was 48 inches, and its tail 7½, the extremity being curled upwards. *The female* also was shot, but dived and escaped: it was in the great pond at Egypt, (close to which mine was obtained,) November 19th, 1753.

I leave the question thus; merely adding that the trachea of mine, (a male) terminated in a large pear-shaped bony capsule, on the left side. The stomach contained hard seeds of sedges, with some vegetable fibre. The testes were comparatively small.

LUNATE BLUEWING.*

Cyanopterus discors.

Anas discors, LINN.—Aud. pl. 313.
Cyanopterus discors, EYTON.

THIS is one of the ducks which, being in high estimation for sapidity, are largely brought to market in the towns. My acquaintance with it is indeed confined to this condition. Robinson notices it, as frequently met with in the wet months. He saw one in the yard of Edward Long, Esq., of Spanish Town, where it fed amongst the poultry: "it was coloured like that painted in Mr. Catesby's History of Carolina, i. p. 100, and was known to be a female by having laid an egg, though Mr. Catesby says the female is all over brown." (MSS. ii. 120) Robinson agrees with Browne in considering this a permanent inhabitant of Jamaica, having known them shot, even during the dry season.

Of those which I examined, the stomachs contained coarse siliceous sand, and small black seeds; the œsophagus of one contained several small fishes.

* Length 16 inches, expanse 24½, flexure 7¼, tail 2¾, breadth of beak $\frac{6}{10}$, height $\frac{7}{10}$, rictus $1\frac{9}{10}$, tarsus $1\frac{6}{10}$, middle toe $1\frac{13}{20}$.

PLAIN BLUEWING.*

Cyanopterus inornatus.—MIHI.

THE Teal which from the absence of the white crescent in both sexes, I have thus named, is well known in Jamaica, and has probably been mistaken for the female of *discors*, with which it associates. Its manners are said to be identical with those of its congener. It much resembles *C. Fretensis* of Eyton, but has not the broad yellow spot on the beak, nor the barred flanks.

The stomachs of such as I have dissected, contained small seeds, and coarse sand. One was brought me alive in March; its voice, when alarmed, was a very subdued hissing, like that of a goose,

* Length 15¾ inches, expanse 24¼, flexure 7, tail 2$\frac{9}{10}$, breadth of beak $\frac{6}{10}$, height $\frac{13}{20}$, rictus 1$\frac{9}{10}$, tarsus 1$\frac{6}{10}$, middle toe 1¾.

Irides hazel; beak black; feet dusky clay colour; (in summer, yellow.) Crown and hind-head dark brown, speckled with pale dashes; sides of head paler brown, with black specks; throat and chin drab-white. Lower neck, back, and tail-coverts bistre, with horse-shoe lines of pale brown. Scapulars dark brown, with green gloss, a narrow border of pale brown. Wing-coverts pale blue; winglet, primaries, and primary coverts blackish, with pale inner webs; secondary greater-coverts white, with large spots of metallic green, which sometimes become disks. Secondaries, outer webs rich golden-green, edge of tips pale; tertials long, pointed, brown with pale shafts, slightly glossed. Tail feathers dark brown, with pale edges, and transverse spots on the outmost. Breast, belly, vent, and under tail-coverts silky drab, irregularly mottled and spotted with blackish; sides marked with horse-shoes of dark brown and pale. Inner surface of wings white.

but very softly. I have met with this species only in Spanish Town.

The eastern point of Old Harbour is occupied by a salt-morass, immediately opposite Goat Island, which affords the principal supply of Ducks to the Spanish Town market; and more particularly since the construction of the railway has driven the birds from Passage Fort. The morass borders the little cove called Galleon Harbour, and extends over a small projecting peninsula, where it is cut into natural channels, intersecting each other at right angles, through which the sea flows, which are almost as regular as if cut by art. The surf, driven through them by the sea-breeze, and the frequent passage of boats, keep these singular canals open, and prevent the growth in them of the mangroves, which are perpetually throwing out their bow-like roots, and encroaching on every unoccupied space. It is at the open *pans* formed by the intersection of the canals, that the Ducks of various species congregate: when the gunners approaching in boats up the canals, come suddenly upon the flocks, and taking them in *enfilade*, bring down numbers at a shot.

SPINOUS SQUAT-DUCK.*

Erismatura spinosa.

Anas spinosa, LATH.—Pl. enl. 967.

IN a broad piece of water near Radonda, which is crossed by the high road from Savanna le Mar to Negril, and which is connected with the vast morass that lies behind the former town, I have seen these curious little Ducks. Rarely more than three are visible at one time, scattered over the water, often very near the road. They pay very little attention to passing travellers; but if one stop and gaze at them, they take alarm, and sink the body lower into the water, until the back is

* Length 13½ inches, expanse 19½, flexure 5$\frac{1}{10}$, tail 2½, breadth of beak at tip $\frac{13}{20}$, rictus 1½, tarsus 1$\frac{3}{10}$, middle toe 2. Irides black; beak glaucous green, culmen blackish, under mandible colour of the nails; feet yellowish-grey, webs paler. Upper head deep bistre; neck minutely mottled with bistre and pale umber. Back, scapulars, and less wing-coverts bistre, each feather tipped and transversely banded with pale umber; feathers on rump velvety, minutely mottled with deep brown and whitish. Tail-coverts mottled with dark brown and bright bay. Tail of 18 feathers, very narrow, black, worn at tips, the shafts extending beyond the vanes. Wings smoke-black; first primary rudimentary; second and third sub-equal; the first five secondaries have the basal three-fourths of the outer webs pure white, and their greater coverts wholly white, forming a white patch in centre of wing. Sides of head marked by two bands of brown, one passing through the eye, the other from rictus to ear; over each of which is a parallel band of pale brown. Chin and throat pale bay, satiny; breast and belly pale buff, mottled obscurely with blackish. Tail-coverts both above and below, hardly differing from clothing-feathers. Inner surface of wings shining grey. Form broad and flattened.

level with the surface. If they suspect danger, they gradually sink wholly under water; and if suddenly alarmed they thus immerse themselves in a moment, *not diving* as other water birds do, *but sinking as they sit,* causing scarcely a ruffle of the surface. I have found them excessively wary, and difficult to shoot; because if they come up and still suspect danger, they immediately sink again, and remain beneath an incredible while, even for several hours, unless they can manage to expose the nostrils to the surface without appearing. When they do rise, it is in the same noiseless, almost imperceptible manner, and in the same posture as they went down. Occasionally they fly, or rather flutter with much flapping of wings, and apparently painful exertion, across the pond, splashing the surface as they go; and I have seen one take a higher flight across the road to the lower water. When undisturbed, they sit long in one place, and spend a good deal of time in smoothing their plumage.

The stomach of the specimen I obtained, a male, from which the description was taken, contained only seeds mostly comminuted.

From a recent letter of Mr. Hill's I extract the following notes. "We have certainly two if not three different Pond Ducks. With two I am familiarly acquainted. One is a very beautiful little bird, with such a prevalence of yellow and red ochre in the plumage, and with the usual

crescent shaped ocellated markings of the Duck tribe, so dark, as to give it a very quail-like appearance. It has in consequence been commonly designated the Quail-duck.* The secondaries of the wing are white; the head is dappled black and ochry-white, and the bill is a brilliant cobalt-blue. The tail is stiff and curved upwards, with (I think) 16 black feathers which radiate broad and distinct, without any lapping of one feather over another. In the *nestling* bird the feathers are differently formed. They are unwebbed in the centre of the shaft, the terminal plumes being few, and curved like the Υ of the Greek alphabet.

"The other is a short squat Duck, almost square in form, the breadth of its body being equal to its length, and uniformly coloured *wood-brown*;—a description of the plumage not perhaps very precise, but so much so with respect to the ordinary hue of the bark of trees, as to make it sufficiently indicative of the prevailing colour. The centre shafts of the tail of this bird terminate in long stiff spines, as stiff and as long as those of a horse-comb.

"I shall not venture to say how far similarity of structure in the tail of the Erismaturine family of Ducks with that of the Cormorant, indicates a similarity in the application of this organ for diving purposes, as Mr. Eyton has conjectured; but a bird kept in a small pool in a flower garden, into which pond-weeds were daily thrown, particularly *chara* and duck-weed, (*pistiaceæ*)

* Hence my friend proposes to name it *Erismatura ortygoides*.

upon which it was supposed to feed, would lead me to think that one important purpose that this remarkably constructed organ was applied to, was to move aside the dense vegetation of shallow pools in which it fed. The habit of this bird was to turn round quick. By this motion it opened out the weeds on the surface, so graphically described by Shakspeare as 'the green mantle of the standing pool,'—and made a clear space for 'swithering with its neb,' as Lincolnshire decoy-keepers would say. It dived frequently, and the period it remained submerged was prodigiously long. It swam backward as frequently as forward, and, I apprehend, found its peculiarly made tail a powerful lever in dilating the space behind it. The little garden, in which the bird was kept, that furnished me with these observations, was a fair representation of its natural haunts. Tufts of flowers, composed of lilies, kincalmias, and Indian-shot, with intermixtures of young vegetating bananas, were an apt substitute for the heliconias, nymphæas, cyperaceæ, juncales, and marantaceous plants, among which it delighted when wild and at large. It sometimes crept on the bank, and sheltered itself among the bowery herbage; but the clots of damp weed, strewn around its pond, were its favourite resting place when out of the water; and there it sat *crouching*, not sitting upright as the Grebe does. In its natural haunts it is occasionally flushed, but its flight is exceedingly short, not usually more than from the bank into the mantling herbage of the pond, where it

instantly disappears in those long submersions I have already noticed."

The remaining *Anatidæ* which have been observed in Jamaica, I shall dismiss with a bare enumeration, furnished by my esteemed friend to whom this work is so deeply indebted. Though some of them have fallen under my own notice, I have nothing to add to their known history. I treat them in this summary manner, the more willingly, because my friend is himself preparing for the press a treatise on the migratory birds of Jamaica, the fruit of many years' close observation.

Chen hyperboreus,	Snow Goose.
Anser Canadensis,	Canada Goose.
Dafila acuta,	Pintail.
Pœcilonetta Bahamensis,	Ilathera Duck.
Mareca Americana,	Wigeon.
Aix sponsa,	Summer Duck.
Querquedula Carolinensis,	Greenwing Teal.
Rhynchaspis clypeata,	Shoveler.
Chaulelasmus streperus,	Gadwall.
Anas obscura,	Dusky Duck.
" *boschas,*	Mallard.
Cairina moschata,	Muscovy Duck.
Oidemia perspicillata,	Surf Duck (Dr. Chamb.).
Fuligula Americana,	Pochard.
" *affinis,*	Scaup Duck.
" *rufitorques,*	Tufted Duck.
Nyroca leucophthalma,	White-eyed Duck.

FAM.—PELECANIDÆ. (*The Pelicans.*)

RUFOUS-NECKED PELICAN.*

Pelecanus fuscus.—LINN.

Aud. pl. 251.

THE high-road from Bluefields to Savanna le Mar winds round the broad bend of the coast, called Bluefields Bay; for nearly half the distance, running close to the shore, which in some parts is a low sandy beach, in others, rocky and precipitous. About a mile from Bluefields the road recedes about a hundred yards from the sea, the intervening space being occupied by tall and dense wood, consisting chiefly of manchioneel, crablight, sweetwood, and tropic-birch, much tangled by an underwood of briers and supple-jacks. As we approach the brow of the cliff, we perceive that the descent, just here, is not a perpendicular rock, but is a very steep slope, covered with a loose and shifting rubble, very unpleasant and even dangerous to the feet. Two enormous birches and a fig, at some distance from each other, springing out of the brow, spread their immense boughs even over the sea that boils among the rocks beneath; and the observer needs no informant to tell him that these trees are occupied as resting places by many large

* Length 47 inches, expanse 79½, flexure 18½, tail 5, rictus 12½, tarsus 3¼, middle toe 4¼.

birds. The earth, and bushes, and rocks beneath, are splashed widely with white ordure, the fishy fetor of which is diffused all through the woods, and is but too perceptible even at the highroad. Scattered upon the ground lie the long bones, bleached in the wind, and the sable feathers, of several Frigate-birds, who met their death where they had been accustomed to live; the victims perhaps of disease, or perhaps of mutual encounters. High up on the loftiest and outmost limbs sit many Pelicans, some preening their plumage, others, with the long beak resting on the breast, enjoying a sluggish repose. Frigates and Boobies are associated with them, but of these we shall speak presently.

From many visits to this place, which commonly goes by the name of the Pelican hole, I have observed that the Pelicans which resort hither, leave the roost at early dawn, and fish for two or three hours; they return about eight o'clock and rest on the roosting trees until about eleven; then they go abroad again and fish along the shore or sit lazily on the rocking sea, till dusk, when in long strings they fly wearily homeward, and spend the night upon their favourite trees.

It is a pleasant sight to see a flock of Pelicans fishing. A dozen or more are flying on heavy, flagging wing over the sea, the long neck doubled on the back, so that the beak seems to protrude from the breast. Suddenly, a little ruffling of the water arrests their attention; and, with wings half-closed, down each plunges with a resounding

plash, and in an instant emerges to the surface with a fish. The beak is held aloft, a snap or two is made, the huge pouch is seen for a moment distended, then collapses as before; and heavily the bird rises to wing, and again beats over the surface with its fellows. It is worthy of observation that the Pelican invariably performs a somerset under the surface; for descending, as he always does, diagonally, not perpendicularly, the head emerges looking in the opposite direction to that in which it was looking before. When the morning appetite is sated, they sit calmly on the heaving surface, looking much like a miniature fleet.

In the evening, as I have stated, we see them pursuing their laborious course to repose. Standing at the door of Bluefields, which from a slight elevation, commands a wide prospect of the beautiful Bay, I have often watched, in the evening,—while the sun, sinking among his gilded piles and peaks of cloud on the horizon-sea, leaves the air refreshingly cool and balmy, while the dying sea-breeze scarcely avails to break the glassy reflection of the surface,—the straggling flocks of Pelicans, from a dozen to forty or fifty, passing slowly along over the shore. On such occasions, they manifest a decided tendency to form long continuous strings, like ducks. When the flocks are beating for fish, or sailing round and round on the watch, there is no such arrangement, but all circle in a confusion equal to that of the planets of the Ptolemaic system. Yet at any

time of the day, in taking a lengthened flight, whether shifting their locality, or slowly sweeping over the sea, they usually take a lineal order.

In flying thus in lines, I have been struck with the unity which they manifest in their motions: the flight is performed by alternate intervals of heavy flappings, and sailing on outstretched motionless wing; and the resumption or suspension of the one or the other state, is regulated by the leading bird of the line. For example; the first begins to flap; in an instant the second begins, then the third, then the fourth, and so on, with perfect regularity of succession; and neither ceases till the first does, and then only each in his own turn. That this does not depend on the period of each motion being constant, is shown by the fact, that the duration of either state is very varying and arbitrary. If a bird be following the same course, near at hand, but not within the line, he does not regard the succession at all, but governs his own motion.

The Pelican on alighting on the water to swim, brings his feet, which before had been stretched out behind, into a standing position, and, as it were, *slides along the surface*, for several yards before he swims.

Voracious and formidable as is the Pelican to the smaller of the finny races, he is not without his enemies among them. I once observed a large Shark gliding along at the surface of the water near a flock of swimming Pelicans, wilily endeavouring to approach some unwary one within seizing

distance, his triangular dorsal cutting the water and revealing his progress, and his intentions. The Pelicans were alert, however, and did not choose a near acquaintance with their insidious admirer, each one rising into safety upon the wing as he approached. I fear he went without his supper on that occasion.

The following interesting note, I quote from a valuable paper by Mr. Hill, "On the aerating powers of birds," read at a meeting of the Jamaica Society, June 1st, 1840. "The facility with which the Pelican resigns itself to fasting, or rouses itself to feasting, was very interestingly exhibited to me in a bird, I saw the other day at Passage Fort. It was a domesticated Pelican, of mature age: it winged backward and forward, visiting the wild flocks, and feeding with them in the harbour during the day, and withdrew from them to roost in its master's yard during the night. In that period of restraint, when it was necessary to observe the caution of drawing its quill feathers, to keep it within very diminished capabilities of flight, until it became familiar and domesticated, it was wholly dependent on the fish provided for it by the fishermen of the beach. Sunday was no fishing day with these men; and this was regularly a day on which there were no supplies for the Pelican. It became in time so conscious of the recurrence of this fast-day, that although at all other times it went daily down to the sea-side to wait the coming in of the canoes, on the seventh day it never stirred from the

recumbent trunk of a tree on which it roosted within the yard. It had been found necessary to pluck its wing within the last two or three months to restrain it within bounds, in consequence of its absence latterly with the wild birds for several days in succession; and in this state it was reduced as formerly to depend on the fishermen for food. The old habit of abstinence and drowsy repose on the Sundays again recurred, and when I saw it, it was once more a tranquil observer of the rest, and with it the fast, of the Sabbath day."

Robinson describes one in captivity, as "a bold fierce bird, which would snap his beak not only at dogs and other small animals, but even at men and horses, that came inadvertently within his reach." (MSS.)

The Pelican is sometimes taken much in the same manner as Gannets in England. A fish is fastened to a board, which is swiftly drawn through the sea by a canoe under sail; the Pelican plunges down upon it, and breaks his neck with the violence of the contact. Although the beak is not pointed, but hooked at the extremity, Sam has assured me that it has been known to be driven through the soft wood of the cotton tree, when that has been used for the board. The flesh is eaten by some of the negroes, notwithstanding its insupportable fishy odour; to overcome which in some degree, they bury it for some hours in the sand of the beach, after which they subject it to three or four boilings before it is eaten.

The term *fuscus* is but poorly applicable to this bird in adult plumage: the long and pointed feathers, being black with a central stripe of pure white, give a hue rather hoary or silvery than fuscous; and the pale yellow head, and deep chestnut neck, margined with a white edging, adds a considerable degree of beauty to the whole.

I dissected a female in May; an operation which though performed in the open air, was almost sufficient to take away the breath. I found the stomach a long capacious sac without constriction, with thick muscular walls; there was a round cavity just beyond the pyloric bend; the intestinal canal was nearly uniform in size, slender, but long, with many convolutions; it measured 99 inches; near the middle was a curious conformation, which I have observed in the intestine of the *Ardeadæ;* as though the tube had been abruptly terminated and closed, and another tube *let in at the side* of the former a little way from the end, which end thus projected like a teat. Two cæca, about 1½ inch long when distended. The appearance of the viscera corresponded in most particulars to that described by Prof. Owen (Pr. Zool. Soc. 1835) in *P. rufescens.* The right lobe of the liver was three or four times greater in volume than the left; the former had its edges rounded; the latter was sub-globose. The gall-bladder small; the gall deep brown-yellow. The spleen was large, oval, about 1¾ by 1¼, soft, and greenish-black. Kidneys about equal, 2 inches by 1 inch. The fat

about the viscera, which was in series of small lumps, was of a deep orange, or almost salmon-red. I may add that our species seems much more arboreal than that described by Prof. Owen. On bending the heel-joint, so as to bring the tarsus up towards the tibia, the toes were strongly incurved; and on my placing a stick beneath the toes, and then forcibly bending the heel, the stick was grasped with so much power that it could with difficulty be dragged away. I perceived from the form which the foot assumed under such circumstances, that the hind toe is opposed to the others in grasping or perching, notwithstanding their continuity of membrane; the web which connects the hind-toe being wide enough to admit an object like the branch of a tree, when the toes are opposed.

The tongue is singularly minute; the *rami* of the hyoïd bone, passing on each side of the larynx, are simply enveloped in the membranes of the pouch, and at their convergence, there is a minute projecting point of cartilage about $\frac{1}{8}$ inch long, which is the only apology for a tongue.

I was astonished to observe that the whole inner surface of the skin on the trunk, was cellular, especially on the breast; composing an immense congeries of membranous cells, inflated with air. The pouch held seventeen pints of water, which when full dripped out at a wound *in the fore-arm.*

DUSKY BOOBY.*

Sula fusca.

Pelecanus sula,	LINN.—Aud. pl. 207.
Sula fusca,	BRISS.

THE trees described in the preceding article as constituting the lodging place of the Pelicans, are frequented also, though less regularly, by a considerable number of these Boobies. They usually huddle together, in little groups, sitting closely side by side, so that four and five may frequently be brought down at a shot.

I have invariably found the stomachs of those thus obtained, quite empty, and as the Frigate-birds assemble on the same trees, I conjecture that the Boobies examined had been compelled to disgorge the prey they had taken, by the assaults of their powerful neighbours: to avoid whose attacks, probably, they took refuge on the trees. As they sit, they frequently utter a loud croaking cackle.

One which was disabled, manifested great ferocity, striking forcibly with the opened beak, endeavouring to pierce with its very acute points, as well as to cut with its keen saw-like edges. It had the sagacity to neglect a stick presented, and strike at the hand that held it; and my

* Length 29 inches, expanse 58, flexure 14¾, tail 7¾, rictus 4$\frac{8}{10}$, tarsus 1½, middle toe 3.

fingers could testify to the lacerating power of their formidable weapon.

The tails of all the specimens that fell into my hands, were much worn at the extremity; probably from incubation on the rocks. The use of the very singular pectination of the middle toe, was indicated, by its being choked up in each one with down. The great length of the body in these birds is particularly observable when the integuments are removed. In one specimen, I found lying among the folds of the intestines, a tape-worm, about three feet in length.

The above is the only *Sula* that we know anything of, about the coast of Westmoreland; but Mr. Hill has identified three others from the Pedro Kays, some of which appear to frequent the little Kays of the coast near Kingston. I believe they are the *Sula fiber*, or drab-coloured Booby, *S. piscator*, or White Booby, and *S. parva*, or Black and white Booby. Of this last Mr. Hill has a pair domesticated, of whose habits he has favoured me with the following pleasing notes.

"The sympathy shewn by gregarious birds for their wounded companions is usually never more strongly manifested than in the Boobies. In the wanton sport of shooting at them when sailing past the kays and islets they resort to, there are few who have not witnessed the extraordinary efforts made by the clamorous flock to assist a wounded bird, when fluttering in the water, and

unable to regain the wing. An accident which happened to one of the two Boobies we have in our yard, gave us an opportunity of seeing traits of this feeling, and of its attendant emotions. My little nephew, in chasing with a small whip one of our birds, entangled the lash about its wing, and snapped the arm-bone. The one bird not alone shewed sympathy for the other, but exhibited curiosity about the nature and character of the accident. Our two birds are male and female. The wounded Booby withdrew into a lonely part of the yard, and stood there drooping. The female sought him as soon as she heard his cry of agony, and after ascertaining, by surveying him all round, that the injury was in the wing, proceeded to prevail on him to move the limb, that she might see whether he was really disabled beyond the power of using it for flight. After a quacking *honk* or two, as a call to do something required of him, the female stretched out one of her wings;—the wounded male imitated her, and, making an effort, moved out, in some sort of way, the wounded member to its full length. He was now required by a corresponding movement to raise it:—he raised the broken arm, but the wing could not be elevated. The curiosity of the female was at a standstill. After a moment's pause, her wounded companion was persuaded to make another trial at imitation, and to give the wings some three or four good flaps. He followed the given signal, gave the required beats upon the air with so thorough a good will, to meet the wishes of his

curious mate, that he twirled the broken wing quite round, and turned it inside out. The mischief was prodigiously increased. It was now necessary to put a stop to this process of investigation of the one bird into the misfortune of the other. I came in just as these exhibitions had occurred, and taking up the bird with its twisted wing, I was obliged after setting the limb, to restrain him from any further gratification of his mate's curiosity by tying the wing into place, and keeping it so tied, till the bone united. The one now attended the other, and carefully examined, day after day, the broken limb. Calling on him to make an occasional effort to raise the disabled and immoveable member, she used her ineffectual endeavours to persuade him to lift it, though tied, by lifting her own from time to time.

"Though this fellow-feeling was so strongly and so remarkably manifested with regard to the broken wing,—when feeding together, the abler female did not hesitate to take advantage of her greater agility, by snatching away from her mate his share of victuals, and grappling with him for one and the same piece of meat. Instinct seems to exhibit simple, not complex emotions. If the male bird had been utterly unable to feed himself, the female would, possibly, herself have supplied him with food:—but, able to eat, the undivided passion was the feeding appetite; and the instinctive habit of striking at the prey, and grabbing it, was not capable of restraint, or of any modification whatever.

"The Booby has an uncontrollable predilection for elevated spots as perching places. If a single stone be higher than others in the yard, the Booby's eye perceives it, and there he takes up his station, and stands, when he has fed, and is satisfied. If a log or a bundle of wood lie about, he mounts it, and perches upon it to sun himself, extending his wings over his tail, and erecting his dorsal feathers for the admission of the genial beams of morning. He roosts upon similar vantage spots, generally on the tops of the triangular coops in which are kept our fattening poultry. He has great prehensile power with his foot; and his serrated middle-toe is frequently applied to scratch the naked skin about his eyes and face. Our birds are fonder of flesh meats, such as beef and pork, than of fish. They dislike fat, and generally reject it, if it be given separately from the lean. They never drink, and are just as regardless of the water about the yard, as if they had been as unadapted for it, as hens and turkeys." *

* The following note I received from my friend, since the above was prepared for the press. "My male Booby died the other day. I found animalcules in the liver. Its anatomy exhibited, in a remarkably interesting manner, the fine adaptation for the purposes of buoyancy, detailed by Professor Owen in the dissection of the kindred Gannet. The muscles showed the air-vessels interspersed among them, in a manner altogether surprising. They had the appearance, as he expresses it, of being dissected. The bird, in the act of expiring, had almost entirely discharged the air from about the chest; but very considerable inflation still subsisted in the thighs. The large femoral muscle might be said to be almost entirely detached from the enveloping integument. The septa of the cells seemed alone to attach it to the adjacent flesh. There was no adhesion, but along one of its edges."

FRIGATE-BIRD.*

Man-of-war bird.

Fregata aquilus.

Pelecanus aquilus,	LINN.—Aud. pl. 271.
Pelecanus leucocephalus, (young),	GMEL.
Fregata aquilus,	CUV.
Tachypetes aquilus,	VIEILL.

BUT that the history of the Pelican and the Booby made allusion to the roosting place near Bluefields necessary, I should have preferred to

The cells were strongly united to the skin; and the roots of the feathers protruded into the internal cavities, as if they grew out of nothing. The cells must have performed their office with marvellous readiness, for the nerves were easily traceable among them. The air-vessels were like so many colourless bubbles.

"The bird had died during the night by the side of the coop on which they both usually roosted, but without attempting to perch. As I removed the dead bird before the other Booby had quitted its morning roost, it was interesting to see it, under a sense of loneliness, running its head into every opened door, to seek its lost companion."

* Length 38 inches, expanse 85, flexure 26, tail 17¾, rictus 5¾, tarsus 1, middle toe 3. Male. Irides black; feet black; beak bluish-grey, blackish at tip: throat-pouch colour of red-lead, slightly pendent at bottom like a dewlap. Whole plumage black, sometimes brilliantly glossed, the head and wings with green, the neck and fore-back with purple.

Female. Feet delicate pink (perhaps not constant); orbits and pouch pale blue; plumage unglossed, back and wing-coverts smoke-brown; breast pure white, which forms a narrow collar. Under parts smoke-brown.

Young. Feet bluish-white. Head, upper-neck, throat, breast and belly pure white. The rest of the plumage black, with some iridescence.

describe it under the present article; for though the trees are common to the three species, the former two frequent the place less numerously, and less constantly than the Frigates. At most hours of the day, one either sees a large number of these birds resting on the lofty trees, or else soaring and circling round and round over the place. Occasionally, in the middle of the day we see half a dozen sailing at an immense height in the air; where their size and colour, the graceful freedom of their motions, and the sublimity of their elevation, might cause them to be confounded with the John Crow Vulture, were it not for the curvature of their wings, the long-pointed tail, often opened and closed, and a superior elegance in their general form.

Being desirous of knowing at what hour the Frigates came home to the roosting place, I visited it on several evenings. On the first occasion, arriving there just as the sun was setting, I found I was not sufficiently early to witness the congregating of the birds, for my ears were saluted, even when in the high-road, by the loud and unpleasant croaking of the Boobies. On my getting to the foot of the first Birch-tree, I could discern many of these sitting on the branches; but as the view was much intercepted by the bushes and trees around, I scrambled down the shingly precipice, to the sea-side. Then on looking up I saw the boughs of the birch immediately over my head, studded with these noisy birds, preening their plumage, or scolding and fighting harshly

with one another, as they sat side by side. While thus gazing upward, I narrowly escaped the misfortune of Tobit. There may have been thirty Boobies in sight, and about eight or ten Frigates, but no Pelicans except three on a tree at a little distance. All on a sudden, however, the Frigates flew off as by common impulse, accompanied by at least fifty more, which I had not seen, they having been concealed by the foliage, or having been sitting on the neighbouring trees,—and by as many Boobies, leaving a good number of the latter, however, still remaining.

Though they all flew about in various directions over the sea, they did not retire from the vicinity; but the Frigates presently separated from the Boobies, taking a loftier elevation, where they sailed and circled in silent dignity, while the Boobies were clamorous in their evolutions.

The latter soon sought their perches again; and this gave rise to incessant squabbles, for if a flyer attempted to alight beside a sitter, the latter, as if affronted at the intrusion, began, with elevated wings and opened beak, to resist, croaking vociferously. The Frigates were long before they returned; some sailed out half a mile, and there performed their elegant manœuvrings, while others still hovered above the roosting trees. Among these some were wholly black, some had the white breast of the female sex, and others the white head of youth, and one was conspicuous by his blood-red pouch, inflated into a tense bladder beneath his chin. From the fact that very few, in-

deed, possess this red pouch, I incline to think it a peculiarity of mature age; for many had the livery of the adult male, whose pouch was inconspicuous, and of a pale buff hue. At length, as the increased darkness gathered in, they also began one by one to settle, very charily, often making a feint to alight, and again sailing off. Some slowly wended their way farther down the bay, and some I left still in the air.

A few days after, I again went between three and four o'clock, but even then the Frigates were reposing in great numbers, but few Boobies, and no Pelicans. I shot a Frigate, which of course aroused the whole flock: and I then had an opportunity of ascertaining their numbers. As they sailed gracefully round, I counted them twice, and both times made them about fifty, but of course I could not be quite exact: from other observations, I should estimate the number of those which habitually repose there to be about sixty, more or less. During an hour and a half that I remained, they did not again alight, and when the sun was close to the horizon they were still soaring in their sublime evolutions. About one sixth of the number were white-headed, their snowy heads and breasts gleaming now and then, as the slanting rays were reflected from them to the observer; and several displayed the inflated scarlet pouch, a little constricted in the middle. As the Frigate flies, the form of its wings reminds one of enormous bats, but for the lengthened tail. When about to alight, they sometimes cackle a little, but are generally

silent. As they sit on the branches they are incessantly employed in picking the vermin from their bodies, with which they are much infested. This is done partly with the beak, but partly with the foot; and I have seen them, after scratching themselves, put up the foot to the beak, apparently delivering something into the mouth. Occasionally they throw the head back, and make a loud clattering with the beak. Passing along the road one forenoon in May, a large number were wheeling round the roosting place, some alighting, and others rising. Those which were on the wing uttered, particularly as they swooped near the tree, on which they made as if they would alight, a repeated *chuck*, not loud, with a rather rapid iteration.

It would appear that this place has been frequented by the Frigates, for at least a hundred years. Robinson has this note: "On a large cotton-tree, between Mr. Wallo's and the Cave, by the sea-side, come to roost many Man-of-war birds, about four o'clock in the evenings, which tree may be easily approached by a canoe, whence the Men-of-war and other sea-fowl may be shot, either in the evening, or before sunrise; for the Man-of-war birds will not leave their roosting-places before sunrise, in this resembling the Noddy. Dr. Gorse of Savanna le Mar, from whom I had this account, observed that the cotton-tree was blanched or whitened by their dung." (MSS. ii. 83.)

I have never seen the Frigate fishing; but have frequently found flying-fish in its stomach half

digested.* Nor have I ever seen it attack the Booby, to make it disgorge, though the fishermen of Jamaica are familiar with this habit. Dr. Chamberlaine, who apparently describes from observation, says of the Frigate, "He is almost always a constant attendant upon our fishermen, when pursuing their vocation on the sand-banks in Kingston Harbour, or near the Palisados. Over their heads it takes its aerial stand, and watches their motions with a patience and perseverance the most exemplary. It is upon these occasions that the Pelicans, the Gulls, and other sea-birds become its associates and companions. These are also found watching with equal eagerness and anxiety the issue of the fishermen's progress, attracted to the spot by the sea of living objects immediately beneath them.

"And then it is, when these men are making their last haul, and the finny tribe are fluttering and panting for life, that this voracious bird exhibits his fierce and pugnacious propensities. His hungry companions have scarcely secured their prey by the side of the fishermen's canoes, when with the lightning's dart, they are pounced upon with such violence, that, to escape its rapacious assaults, they readily in turn yield their hard-earned booty to this formidable

* An intelligent fisherman, who is in the habit of trading about the coast, and to Cuba, asserts that he has often seen the Frigates fishing far out at sea; such large fishes as Bonito, that leap out of water, being their prey; which they catch with the foot, plunging down on them, and then mounting, deliver the booty to the mouth like a Parrot. I feel it right to repeat this statement, though I think it improbable, from the weakness of the foot. He adds that they breed in great numbers on the Pedro Kays, laying on the bare rocks.

opponent. The lightness of its trunk, the short tarsi, and vast spread of wing, together with its long, slender, and forked tail, all conspire to give him a superiority over his tribe, not only in length and rapidity of flight, but also in the power of maintaining itself on outspread pinions in the regions of his aerial habitation amidst the clouds; where, at times, so lofty are its soarings, its figure becomes almost invisible to the spectator in this nether world." (Jamaica Alm. 1843, p. 87.)

I know nothing positive of the nidification of the Frigate. On the face of Pedro Bluff, about four feet from the surface of the sea, which, however, in stormy weather dashes furiously into it, there is a hole into which a man may crawl, but which, within, widens into a spacious cavern. A person who had visited this place, told me that on its floor lie the skulls and bones of men, mouldering in damp and decay; the relics, probably of some of the unfortunate Indians, who preferred death by famine to the tortures and cruelties of the Spaniards. To this cave, he affirmed, the Frigates and Pelicans resort to lay their eggs; depositing them on the projecting ledges and shelves of the soft and marly rock. On my way up to Kingston from Bluefields in June, lying windbound under the Pedro, I induced a white man residing there to accompany me to the face of the Bluff, where he said the Pelicans and Frigates roosted, and where the former built and laid. After walking about a mile in the most burning heat, through cacti, aloes, and spinous bushes, a most peculiar vegetation, and over the sharp needle-like

points of honey-comb limestone, occasionally leaping deep clefts, we came to the spot. Many birds of both kinds were sitting on the low stunted trees, but we could not find a single nest nor eggs; though, as my guide said, at some times they were numerous, but only of the Pelican; of the Frigate's nidification he knew nothing.

The gular pouch of the old male, is not connected with the mouth, like that of the Pelican, but appears to be an air-cell; perhaps having some analogy to the erectile caruncles of the male Turkey. If we take the skeleton of the Pelican as a standard, the sternum of the Frigate is greatly developed *laterally*, as that of the Booby is, *longitudinally*. The middle claw is pectinated. I think I know of no bird so infested with entozoïc worms as the Frigate. Immense bunches both of tænoid and cylindrical worms are found in almost every specimen, besides some curious kinds apparently of a higher organization. Bird-lice and bird-flies also infest it.

One which was wounded, on being taken up, was fierce, endeavouring to seize with his beak. And a specimen kept alive by Dr. Chamberlaine, became animated and pugnacious when the children or servants approached it, and struck at them with its formidable bill.

TROPIC BIRD.*

Phaeton æthereus.—LINN.

Aud. pl. 262.

THE bird which Robinson has described (MSS. ii. 124,) in the terms quoted below, is doubtless to be referred to this species, though from the shortness of the tail-feathers, and the colour of the beak and feet, I presume it to have been an immature specimen. He describes its habits as resembling those of the Terns: it was brought to him alive, having been knocked off a fish-pot-buoy; he kept it almost a week, feeding it with the offal of fish, which it ate greedily. When it attempted to walk, it spread its wings, and waddled along with much difficulty, which arose not only from the backward position of its legs, but also from their shortness and weakness. Sometimes it made a chattering noise, like the Belted Kingfisher, and it had another cry, not unlike that of a Gull. It would bite, upon occa-

* "Length 15 inches, expanse 32, flexure 10, beak 3, tail of 14 feathers, graduated, the middle pair 5 inches, the outmost 3, middle toe $1\frac{8}{10}$. Beak white, or very pale yellow; feet white; claws black. General plumage white, very silky, especially about the head: bases of crown feathers black. Upper neck, back, rump, and wing-coverts marked with cross, black, arcuated bars. Beneath each eye two black lines, which passing over the eye, meet at the back of the head. Tail, shafts and tips black. Five first quills have the outer edges and shafts black; the remaining primaries and secondaries, bluish; tertiaries chiefly black, with white edges, forming a black spot in each wing. Feet far behind." (Rob. *abridged.*)

sion, very hard. The head and neck were very big in proportion.

It is mentioned to me as one of the constant frequenters of the Pedro Kays.

FAM.—LARIDÆ. (*The Gulls.*)

CRESTED TERN.*

White Egg-Bird.

Thalasseus Cayanus.

Sterna Cayana, GMEL.—Aud. pl. 273.
Thalasseus Cayanus, BOIE.

THIS large and beautiful Tern is the most common species we have in the vicinity of Bluefields. Its powerful beak of a bright orange hue, its pointed occipital crests of black, the pearly tint of its upper, and the satiny lustre of its under parts, constitute it a species of much beauty. In the autumn months we may frequently see this bird fishing. A quarter of a mile from the shore, off Crabpond Point, there is a reef, above which it may be seen almost every day. Quite solitary in his habits, the Crested Tern prefers to fish alone; and though sometimes two or three may be in view at once, there is no association, no accordance of movement, as in the Pelicans. High above the water, we discern a bird, the snowy white-

* Length 21 inches, expanse 45, flexure 14½, tail 7¼, rictus 3$\frac{4}{10}$, tarsus 1$\frac{4}{10}$, middle toe 1$\frac{8}{10}$. Two cæca ⅛ inch long.

ness of whose plumage contrasts with the blue sky; he flies rapidly round and round in a large circle, quickly flapping his wings without intermission. Suddenly, he arrests his flight, flutters his wings in rapid vibration, as he looks downwards, but in a moment proceeds as before: it was doubtless a fish near the surface, but which disappeared before he could descend. Presently he again stops short, flutters,—then bringing the elbow of the wings to a right angle, descends perpendicularly, but with a singular turning of the body, so as to present now the back, now the belly, alternately, to the observer; not, however, by a rotation, but irregularly, and as if by jerks. But his purpose is again frustrated; for on nearly reaching the surface, he recovers himself with a graceful sweep, and remounts on flagging wing. Again he circles; and again, and again stops: at length, down he swoops, disappears with a plash, and in a moment breaks, struggling, from the wave, and, as if to rise burdened with prey were difficult, flags heavily near the surface, and circling slowly round, gradually regains his former altitude. Suddenly,—as if alarmed, though nothing appears to cause it,—he utters two or three loud cries in a plaintive tone, and flies off, along the coast, until he is concealed from view by the projecting mangroves. Yet, strange to say, in a few seconds he returns, and calmly pursues his wonted occupation. When satiated, he betakes himself to some one of the logs of wood which are placed as buoys by the fishermen to mark the position of their sunken fish-pots; and on this he re-

poses all night, rocked to sleep by the roll of the surf. The fishermen, on visiting their pots at early day, find the Terns, exceedingly often, sitting on the buoys; and so fearless are they, that not seldom a canoe may be paddled nearly within touch of one before he will fly.

Though web-footed, I believe none of the Terns are ever seen to swim. One shot and wounded in the wing made no effort to strike out, but merely struggled in the water as a land-bird would do. This specimen was brought home alive; it attempted to bite, striking with the beak. The flesh was dark, and resembled that of a Duck.

EGG-BIRD.*

Hydrochelidon fuliginosa.

Sterna fuliginosa,	Gmel.—Aud. pl. 235.
Hydrochelidon fuliginosum,	Boie.

For my information concerning this species, I am principally indebted to Mr. Hill; a single specimen only having fallen into my possession, which was shot by Sam, sitting on a fish-pot buoy near Bluefields, in the manner of the former species.

It is, however, a bird of considerable commercial importance; for its eggs, in common with those

* Length 17 inches, expanse [40, computed,] flexure $11\frac{6}{10}$, tail $7\frac{6}{10}$, uropygials 4, rictus $2\frac{3}{10}$, tarsus 1, middle toe $1\frac{2}{10}$.

of the Noddy (*Megalopterus stolidus*) and the Sandwich Tern (*Thalasseus Cantiacus*) form an object of profitable adventure to the crews of numerous small vessels, fitted out in the spring from Kingston and other ports. The Pedro Kays are the grand field whence this harvest is reaped. "These lonely islets," observes Mr. Hill, "are the resort of thousands and tens of thousands of sea-fowl. As soon as visitors land, myriads of birds are upon the wing in all directions. Some flocks rise, in circling flight, high up into the air; and descending again in the same dense numbers as they rose, settle in more remote places:—others break away hurriedly, and fly in a wide sweep far around, but return again hastily to the rocks they had quitted, reconciled to bear with the disturbance. The turmoil and hubbub of the thousands of birds thus suddenly put upon the wing, overpower, for a moment, the roar of the breakers, and darken the air like the sudden passing of a cloud.

"The constant inhabitants of the rocks are some three species of Gannet, all known as Boobies; some half a dozen species of Tern, among which the Noddy and the Egg-bird are exceedingly numerous; together with the Frigate Pelican, the Tropic-bird, and the Petrel; besides a multitude of Gulls. . . . .

"There were four vessels from Jamaica there at this time [April, 1846] gathering eggs; the months of March, April, and May being considered the egg-harvest.

"The Kays are open to all adventurers; but the

egg-gathering is regulated by a custom which recognises the first-coming vessel as commanding for the season. The second vessel in seniority is called the Commodore; the first being styled the Admiral. They have a code of laws, to which, in a spirit of honourable compliance, all are expected to shew obedience; and in case of any infraction of the obligations thus voluntarily imposed upon themselves, a jury selected from the several vessels try complaints, and with due formality inflict punishment for offences.

"The only kind of vegetation, excepting a single cocoa-nut, on these desert rocks, is a stunted tree, called by the egg-gatherers *saffron-wood.* It is extremely resinous, and the leaves are used by them as tea; and I suspect it is the same plant as the *tea-shrub* of the Bahama islands. Among the branches of these trees, at a very small elevation from the ground, the Noddies build nests, that have become large by a long accumulation of dung and sticks. The nests are resorted to for a succession of years, and are repaired and raised upon, season after season, till they have grown into huge piles, among the branches;—the large masses of interwoven twigs prevailing even more than the green foliage. The Egg-bird and the Sandwich Tern, if they are unable to gather any of the dead foliage of these shrubs, or any dried leaves of sea-weed, as a covering for the cavity in the rock in which *they* nestle, lay their eggs on the bare sand: just making so much of a depression by scratching the ground as suffices to

hollow it for the reception of some three eggs, the addition of the *urate of lime* from their dung sufficiently cementing the loose particles."

In a subsequent communication my friend reverts to the same interesting subject. "The nests of the Noddy, which, though so elaborately framed with sticks, are exceedingly shallow, with scarce any hollowing at all, are always embellished with an addition of broken shells, (*sea-shells*,) generally speckled and spotted like the eggs. Mr. Wilkie examined them, and they were sea-shells. The obvious suggestion for this curious prevalence of a habit, which he found to distinguish *every nest*, was its deceptiveness; so much similarity existed between the sea-shell and the egg-shell. I find that Audubon records a similar fact with the Noddy Terns of the Florida Kays. These are his words: 'In a great many instances, the repaired nests formed masses nearly two feet in height, and yet all of them had only a slight hollow for the eggs, *broken shells of* WHICH *were found among the entire, as if they had been purposely* PLACED THERE.' Mr. Wilkie was totally unacquainted with this noticed particular in Audubon's 'Ornithological Biography.' Has Audubon misread his note '*broken shells*,' and by the following words 'of which,' made them *egg-shells*, when they should have been *sea-shells*? This is at least worth a remark. Mr. Wilkie says he took the pieces of shell out of the nest, and inspected them. Audubon merely says, 'The bushes rarely were taller than ourselves, so that we could easily *see the eggs in the nest*.'"

Specimens of the eggs of these three species of Tern, procured at the Kays by George Wilkie, Esq., who kindly furnished the above information to Mr. Hill for the benefit of this work, are now before me. There is scarcely any difference in size, the dimensions being 2 inches by $1\frac{3}{8}$: the Noddy's, however, is of a more conical form. The ground of all is white; that of the Noddy has a few blackish specks thinly scattered over it, and at the larger end some irregular splashes of brown. That of the Sandwich Tern is uniformly speckled with dull reddish-purple; while that of the Egg-bird is marked with the same hue in fewer but larger spots.

To the above *Laridæ*, Mr. Hill adds *Sterna argentea* (BONAP.) killed in Kingston Harbour; and *Hydrochelidon nigrum* (BOIE) and *Xema atricilla* (BONAP.) as frequenting the Kays.

Of two other birds he thus gives me indications: —"A curious bird of the family *Procellariadæ*, (the Petrels,) was found in the Rio Grande in Portland after the late storms [in the autumn of 1846.] Hurricanes introduce into these islands new birds, and disperse those peculiar to these islands into other localities." The other seems to be of the family *Alcadæ* (the Auks). "In the Blue Mountains, high up towards their summits, is a curious *burrowing* bird, which they call the Blue-Mountain Duck. It is described as having webbed feet, and a hooked parrot-bill. This description would indicate a species of *Alca*. It inhabits holes in the cliffs, and is

said to burrow to the extent of ten feet. Nothing is known of its habit of feeding. E. M'Geachy, Esq., Crown Surveyor for the county of Surrey, first informed me of the existence of such birds. He had himself taken them from their burrows. The facts have also been assured to me by other observers." A specimen of this bird is said to be in the possession of George Atkinson, Esq., of Newcastle-on-Tyne, who, in answer to an application from me, kindly promised me a particular description; but other engagements, probably, have not yet afforded him the necessary leisure.

FAM.—COLYMBIDÆ. (*The Divers.*)

BLACK-THROATED GREBE.*

Podilymbus Carolinensis ?

Podiceps Carolinensis,	LATH.—Aud. pl. 248.
Podilymbus Carolinensis,	LESS.
Sylbeocyclus Carolinensis,	BONAP.

No living specimen of this bird has fallen under my notice. It is, however, familiar to Mr. Hill,

* Length 11½ inches, expanse —?, flexure 4$\frac{6}{10}$, tail 0, rictus 1½, tarsus 1$\frac{4}{10}$, middle toe 1$\frac{9}{10}$. Irides hazel; beak pale grey, marked about the middle by a broad cincture of black, in which the nostrils are pierced. Feet black. Male: Head and neck pale purplish-grey, darker on crown and nape: a circle of white surrounds the eye, edged outwardly with black. Plumage at base of beak black: a broad band of black runs down the centre of throat. Upper parts silky black, paler on wings.

who kindly favoured me with a preserved specimen, and with some of his own notes. It is frequently shot in the Rio Cobre. One which Mr. Hill had alive was put into a barrel half filled with straw, on which was laid a large pan of water; the brevity of its wings precluding the possibility of its getting out. It was reconciled immediately; and fed heartily on raw fish chopped up. It lived in apparent health three weeks, and died at length without manifest illness, or any perceptible cause; though want of exercise or alteration of diet may have contributed to it.

A few further particulars of the habits of this same individual are contained in a recent letter from my friend. "The several specimens of the Black-gorget Grebe that I have had, were brought to me from the sedgy grounds of the River Cobre. Usually the banks of the river are deep; but there are places in which the course of the stream has been changed, leaving, between one channel and the other, open meadows and banks fringed with a bristling growth of cyperaceous and other border herbage. It will be readily perceived, that these stretches of blended sward and sedge are the only parts of the river fitted for a bird with fin-toed feet and short wings, to quit the water and seek the shore. It is only there they can rise out of the stream upon the green turf; and there they indulge in slumbers

Under parts light grey, with transverse pencillings of black: vent dusky. Female: Beak, head, neck, and breast dull yellowish-grey, the markings rather less conspicuous; under parts minutely mottled with black and yellowish-grey. Weight 10¾ oz.

in the sunshine, secluded and secure. I judge this to be their habit, from the pleasure a bird I kept some few weeks alive used to feel in lying on the weeds placed for him by the side of a bowl of water, in which he fed. He would there repose for hour after hour, doubled up like an antelope on the grass, with its head and neck curved,—if I may compare beings so dissimilar,—in the graceful attitude in which I made my drawing, now in the hands of the Zoological Society. The food given to my bird was Guinea-corn. After it had been softened in the water, it ate it readily. The seeds of aquatic plants may be considered, therefore, quite as much as water insects and mollusca, its accustomed food. The eye, which is dark and bright, like a gazelle's, has a thick orbit of that fleshy character, to which pigeon-fanciers give the name of *putty-eye*, in their favourite birds."

WHITE-WINGED GREBE.*

Diver.

Podiceps Dominicus.

Colymbus Dominicus,	LINN.
Podiceps Dominicus,	LATH.—Spix. Av. Br. 101.

THE ponds of the cattle-pens are the favourite resorts of this little Grebe. I have been most

* Length 9 inches, expanse 14, flexure $3\frac{6}{10}$, tail 0, rictus $1\frac{3}{10}$, tarsus $1\frac{3}{10}$, middle toe $1\frac{3}{4}$, lateral breadth of tarsus $\frac{7}{10}$, breadth of toe $\frac{4}{10}$.

familiar with it at the pond of Mount Edgecumbe, which, though not more than an acre or two in extent, used to be speckled with a good number of these miniature ducks; their little black heads and the tops of their backs alone being visible above the surface. On the slightest alarm, they dive with the quickness of thought; and so vigilant is their eye and so rapid their motion, that, ordinarily, the fowling-piece is discharged at them in vain. It is commonly said of some birds, that they dive at the flash of the pan; but though I always used percussion-locks, I could never succeed in hitting one, until I formed a screen of bushes, behind which I might fire in concealment. I then found no difficulty. Hence, I infer that their quick eye detects and takes alarm at the small but sudden motion of the falling hammer. They remain long, and swim far, under water; coming up where quite unlooked for. Some that I have had an opportunity of observing when swimming a little beneath the surface, shot along with expanded wings, almost with the celerity of a fish. They do not always dive, however, when frightened; sometimes they sink deeper than before, and swim away almost submerged. When not alarmed, they call and answer each other, with a loud *clang*, like the note of a trumpet.

One of these birds which I had wounded slightly,

Irides bright yellow; feet and beak black. Upper parts smoky black; wing-quills white; outer webs and tips of the first four or five dusky. Chin black; throat and cheeks blackish ashy; breast blackish; belly feathers tipped with white, giving a mottled appearance. Whole plumage satiny. Intestine 16 inches; two cæca ¾ inch long.

on being put into a large washing-bowl half filled with water, swam awhile; but repeatedly, when alarmed, by striking vigorously with both feet together, leaped clean over the edge of the basin. When on the floor, it ran a few steps at a time, very well, but grotesquely; the body elevated on the legs almost perpendicularly; but ever and anon, as its first impetus slackened, it fell on its breast, and sometimes rolled over. After a while, however, becoming more calm, it walked more easily, still much raised on the legs; but would suddenly squat down on the belly, and so remain.

Early in August, I found near the edge of Mount Edgecumbe pond a nest of this Grebe—a round heap of pond-weed and rotten leaves, flattened at the top, and slightly hollowed; it was about fifteen inches wide, and six or eight thick. The top was damp, but not wet, and very warm from exposure to the sun's rays. We drew it on shore, for it was entangled among the branches of a fallen tree, but *not attached* to them, and presently found on the matted weed, just below the surface in the place where we had dragged it, a large white egg, excessively begrimed with dirt, doubtless from lying on the decaying leaves. On being cleansed, I found it covered with a chalky coat, easily scratched off.

A few weeks after, I again visited this pond. On approaching before sun-rise, (for I had travelled by the brilliant starlight of the tropical heavens,) I saw a Grebe sitting on a new nest, in the same spot as I had found the former one: this nest was composed of similar materials, and contained four eggs. Early

in December we found another nest, with the young just peeping from the egg. It is probable, therefore, that several broods are reared in a season.

One of my lads, who has lived close by this pond, affirms that the birds move the nest about to different parts of the pond; and that they use the same till it will no longer hold together, and then construct a new one. He also states that they often fight during the night; and that the conquered ones resort to a smaller pond, where they may be easily captured by hand: for, by chasing them to and fro, the small pond being shallow, they at length become wearied, and will dive no more, but make for the shore, and are caught before they can fly.

The flesh is dark and oily. The gizzards of all that I obtained were filled with a finely comminuted substance, rather dry, of an unctuous appearance, and mingled with short silky filaments. A close examination with a lens failed to determine its nature; but I believe it to have been principally vegetable.

THE author, in bringing to a close these notices of "The Birds of Jamaica," craves the indulgence of his readers to make an observation on the use of such studies. The Christian is taught, whatsoever he does, to do all "to the glory of God;" and as "whoso offereth *praise* glorifieth" Him, the constant object of our investigations should be the

bringing out to view fresh proofs of His unspeakable wisdom, skill, power, forethought, care, and love, in the creation, preservation, and sustentation of His creatures. The gratification of scientific curiosity is worse than idle, if it leads not to this: whatever exactness of knowledge we may acquire, or whatever scientific skilfulness we may attain, is, without this result, "but shaping letters aright without learning to know their signification and value." "It is *God appearing in the creatures*, that is the life, and beauty, and use, and excellency of all the creatures; —without Him they are but carcases, deformed, useless, vain, insignificant, and very nothings."*

* Baxter's "Walking with God," Ch. i. ¶ 9.

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